

KV-V1410A/V1410D/V1410E

RM-846

SERVICE MANUAL

ET Model

KV-V1410A

Chassis No. SCC-G53A-A

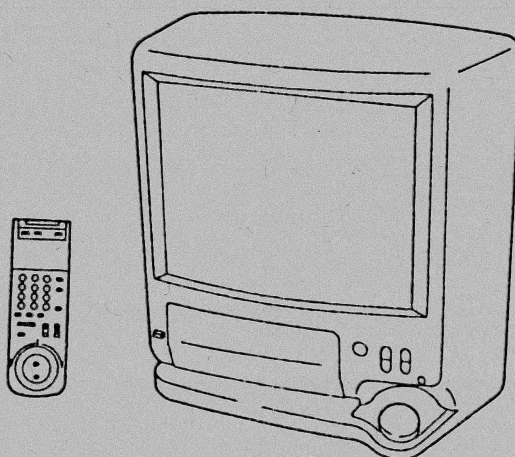
AEP Model

KV-V1410D

Chassis No. SCC-G31A-A

KV-V1410E

Chassis No. SCC-G31B-A



BC-2 CHASSIS

- Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENTS III for MECHANICAL ADJUSTMENTS. (9-973-211-11)

MODELS OF THE SAME SERIES

KV-V1410A/V1410D/V1410E	

SPECIFICATIONS

TV Section

Television system B/G
Colour system PAL/NTSC^{4.43}
Channel coverage See "Receivable channels and channel display" at the bottom.
Picture tube Trinitron
Approx. 37 cm (14 inches)
Aerial in 75-ohm aerial socket for VHF/UHF
Intermediate frequency
Video: 38.9MHz
Audio: 33.4MHz

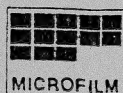
Video Section

Format VHS standard
Video recording system
Rotary 2-head helical scanning system
Audio recording system
Monaural
Video signal PAL
Tape speed PAL: 23.39 mm/sec.
NTSC (playback only): 33.35 mm/sec.
Maximum recording time
240 minutes with E-240

Inputs and Outputs

Inputs LINE IN VIDEO: phono jack (1)
1 Vp-p, 75 ohms, unbalanced, sync negative
LINE IN AUDIO: phono jack (1)
Input level: 500 mVrms (100% modulation)
Output EURO-AV: 21-pin
EURO-AV: 21-pin
Headphones jack Monaural minijack

— continued on next page —



TRINITRON® COLOR VIDEO TV

SONY®

General

Clock	Quartz locked
Power back up	Approx. 1 hour or less
Power requirements	230 V AC, 50 Hz
Power consumption	KV-V1410A: 65W KV-V1410D/V1410E: 75W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	Approx. 391 x 409 x 443 mm (w/h/d) (15 1/2 x 16 1/8 x 17 1/2 inches)
Mass	Approx. 15.5 kg (34 lb 3 oz)
Accessories supplied	Remote Commander (1) R6 (size AA) batteries (2)

Note

Design and specifications are subject to change without notice.

This appliance conforms with EEC Directive 87/308/EEC regarding interference suppression.

Receiveable Channels and Channel Display

	Channel coverage	Channel display
Western European countries	E-2 to E-12 E-21 to E-69	C02 to C12 C21 to C69
Italy	A, B, C, D, E, F, G, H	C13, C14, C15, C16, C17, C18, C19, C20
CATV	S-1 to S-41	S01 to S41
Belgian CATV	S-01 to S-05	S42 to S46

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK Δ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

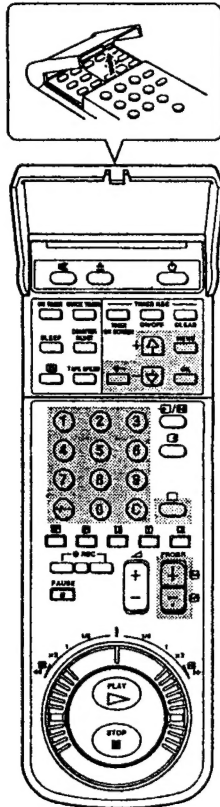
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SECTION 1 GENERAL

The operating instructions mentioned here are partial abstracts from the Operating Instruction Manual. The page numbers of the Operating Instruction Manual remain as in the manual.

1-1. TUNING IN TO TV STATIONS



You should preset the channels (up to 60 channels) by choosing either the automatic or manual method.
The automatic method is easier if you want to preset all receivable channels at once. Use the manual method if you want to allocate programme numbers to the channels one by one.

Before you begin

- Depress the switch on the video TV to switch it on.
If the lamp on the video TV is lit in red, press , PROG. +/- or a number button on the Remote Commander.
- Lift the flap on the Remote Commander and locate Menu operation buttons.

Selecting the Language on the Menu

You can select one of several languages for the menu and on-screen information. The initial setting is English.

- Press MENU.
The main menu appears.

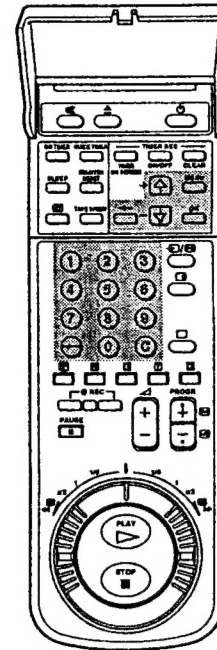


- Move the cursor () to "LANGUAGE" with + or - and press OK.
The LANGUAGE menu appears.



- Select the language you want with + or - and press OK.
- Press MENU to go back to the original screen.

Note on the DEMO function
If you choose "DEMO" on the main menu and press OK, you can see a sequential demonstration on the menu functions on the screen. Press any button (e.g. MENU) to stop this function.



To stop automatic channel presetting
Press on the Remote Commander.

Presetting Channels Automatically

- Press MENU to display the main menu.
- Move the cursor to "PROGRAMME PRESET" with + or - and press OK.
The PROGRAMME PRESET menu appears.



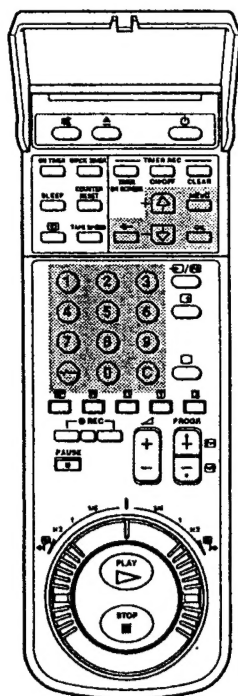
- Move the cursor to "AUTO PROGRAMME" with + or - and press OK.
The AUTO PROGRAMME menu appears.



- Press OK.
The first element of the PROG position turns red.
- Select the programme (number button) from which you want to start presetting.
Select the first element of the double-digit number with + or - or the number buttons (e.g. For "06", select "0") and press OK.
The second element turns red.

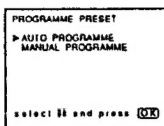


- Select the second element of the double-digit number with + or - or the number buttons (e.g. For "06", select "6") and press OK.
The first element of the CH position turns red.
- Select C (to preset a regular channel) or S (to preset a cable channel) with + or - or C (Press C once for "C" and twice for "S") and press OK.
- Select the first and second elements of the double-digit number of the channel in the same way as in steps 5 and 6.
Presetting starts from the selected programme position.
The preset programme and channel numbers are displayed on the screen in sequence. When presetting is finished, the PROGRAMME PRESET menu reappears. All available channels are now stored on successive number buttons.

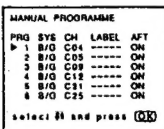


Presetting Channels Manually

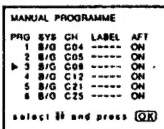
- 1 Press MENU to display the main menu.
- 2 Move the cursor (►) to "PROGRAMME PRESET" with + or - and press OK. The PROGRAMME PRESET menu appears.



- 3 Move the cursor to "MANUAL PROGRAMME" with + or - and press OK. The MANUAL PROGRAMME menu appears.



- 4 Using + or -, move the cursor to the programme position (number button) to which you want to preset a channel, and press OK.



- 5 Press OK. The CH position turns red.

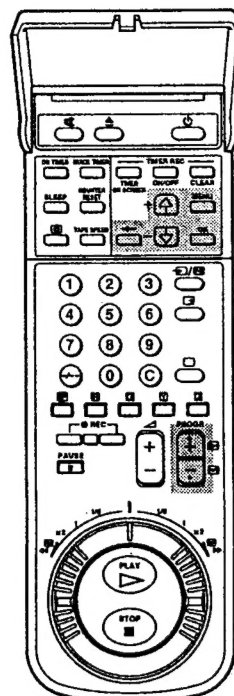
- 6 Search for the channel with + (up) or - (down). The channel number starts counting up or downwards. When a channel is found, it stops. If you want to preset this channel, press OK. If not, press + or - to search for another channel.

You can also select the channel number directly with the number buttons. Press C (once for regular channels, twice for cable channels), number buttons (e.g. For 06, press 0 and 6), then OK.

- 7 Repeat steps 4 to 6 to preset other channels.
- 8 After you finish presetting, press MENU to go back to the original screen.

For programme positions beyond 6
The display scrolls by pressing - repeatedly.

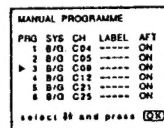
If you have made a mistake
Press ◀ to go back to the previous position.



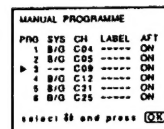
Skipping Programme Positions

You can skip unused programme positions when selecting programme with PROGR +/- buttons. However, the skipped programmes may still be called up when you select them with the number buttons.

- 1 Press MENU to display the main menu.
- 2 Move the cursor (►) to "PROGRAMME PRESET" with + or - and press OK. The PROGRAMME PRESET menu appears.
- 3 Move the cursor to "MANUAL PROGRAMME" with + or - and press OK. The MANUAL PROGRAMME menu appears.
- 4 Using + or -, move the cursor to the programme position which you want to skip and press OK. The "SYS" position turns red.



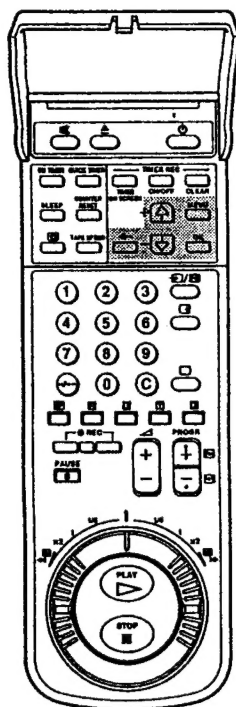
- 5 Press + or - until "----" appears in the "SYS" position and press OK.



When you select programmes using the PROGR +/- buttons, the programme position is skipped.

- 6 Repeat steps 4 and 5 to skip other programme positions.
- 7 Press MENU to go back to the original screen.

For programme positions beyond 6
The display scrolls by pressing - repeatedly.



If you have made a mistake
Press \leftarrow to go back to the previous
position.

Captioning a TV Station Name

You can name a channel using up to five characters (letters or numbers) to be displayed on the TV screen (e.g. MTV). Using this function, you can easily identify which channel you are watching.

- 1 Press MENU to display the main menu.
- 2 Move the cursor (\rightarrow) to "PROGRAMME PRESET" with $+$ or $-$ and press OK. The PROGRAMME PRESET menu appears.
- 3 Move the cursor to "MANUAL PROGRAMME" with $+$ or $-$ and press OK. The MANUAL PROGRAMME menu appears.

MANUAL PROGRAMME				
PRG	SYS	CH	LABEL	AFT
1	B/G	C04	----	ON
2	B/G	C05	----	ON
3	B/G	C08	----	ON
4	B/G	C12	----	ON
5	B/G	C21	----	ON
6	B/G	C25	----	ON

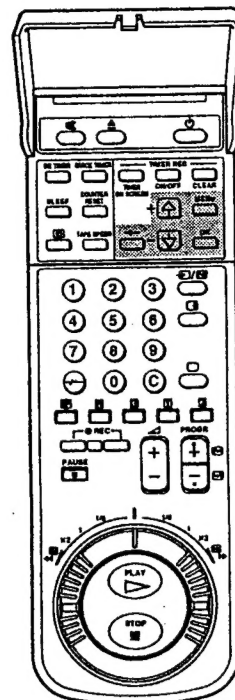
select Δ and press OK

- 4 Using $+$ or $-$, move the cursor to the programme position you want to caption and press OK repeatedly until the first element of the "LABEL" position turns red.
- 5 Select a letter or number with $+$ or $-$ and press OK. The next element turns red. Select other characters in the same way. For the element you want to leave blank, select "-" and press OK.

MANUAL PROGRAMME				
PRG	SYS	CH	LABEL	AFT
1	B/G	C04	----	ON
2	B/G	C05	MTV	ON
3	B/G	C08	----	ON
4	B/G	C12	----	ON
5	B/G	C21	----	ON
6	B/G	C25	----	ON

select Δ and press OK

- 6 After selecting all the characters, press OK repeatedly until the cursor appears by the next programme position. Now the caption you chose is stored.
- 7 Repeat steps 4 to 6 to caption other channels.
- 8 Press MENU to go back to the original screen.



To reactivate automatic fine-tuning (AFT)
Repeat from the beginning and
select "ON" in step 5.

Manual Fine-Tuning

Normally, the automatic fine-tuning (AFT) is already working. However, if the picture of a programme is distorted, you can use the manual fine-tuning function to obtain better picture reception.

- 1 Press MENU to display the main menu.
- 2 Move the cursor (\rightarrow) to "PROGRAMME PRESET" with $+$ or $-$ and press OK. The PROGRAMME PRESET menu appears.
- 3 Move the cursor to "MANUAL PROGRAMME" with $+$ or $-$ and press OK. The MANUAL PROGRAMME menu appears.
- 4 Using $+$ or $-$, move the cursor to the programme position corresponding to the channel which you want to manually fine-tune, and press OK repeatedly until the AFT position turns red.

MANUAL PROGRAMME				
PRG	SYS	CH	LABEL	AFT
1	B/G	C04	----	ON
2	B/G	C05	----	ON
3	B/G	C08	----	ON
4	B/G	C12	----	ON
5	B/G	C21	----	ON
6	B/G	C25	----	ON

select Δ and press OK

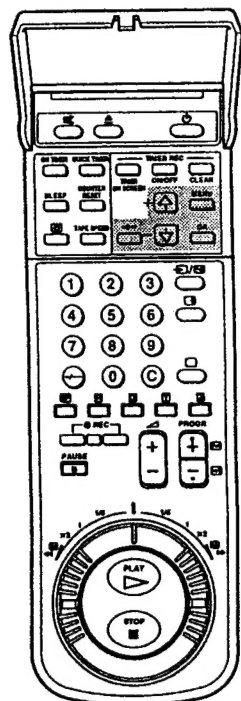
- 5 Fine-tune the channel with $+$ or $-$ so that you get the best TV reception. As you press these buttons, the frequency changes from -15 to +15.

MANUAL PROGRAMME				
PRG	SYS	CH	LABEL	AFT
1	B/G	C04	----	ON
2	B/G	C05	----	ON
3	B/G	C08	----	- 3
4	B/G	C12	----	ON
5	B/G	C21	----	ON
6	B/G	C25	----	ON

select Δ and press OK

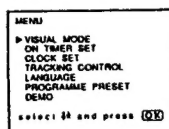
- 6 After fine-tuning, press OK. The cursor appears beside the next programme position. Now the fine-tuned level is stored.
- 7 Repeat steps 4 to 6 to fine-tune other channels.
- 8 Press MENU to go back to the original screen.

1-2. SETTING THE 'CLOCK

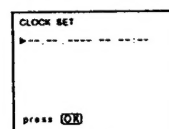


You need to set the clock for using timer recording and quick-timer recording functions. Before you begin, lift the flap on the Remote Commander and locate the Menu operation buttons.

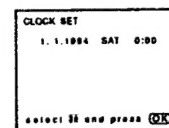
- 1 Press MENU to display the main menu.



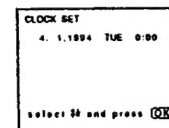
- 2 Move the cursor (▶) to "CLOCK SET" with + or - and press OK. The CLOCK SET menu appears.



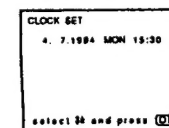
- 3 Press OK to start setting the clock. The day section turns red.



- 4 Set the day with + or - and press OK. The month section turns red.



- 5 Using + or - and OK, set the month, year, hour and minute in the same way as in step 4.

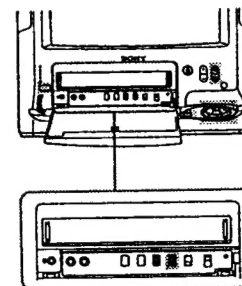


- 6 After setting the minute, press OK. The clock starts working.
- 7 Press MENU to go back to the original screen.

If you have made a mistake
Press ◀ to go back to the previous position.

If power is interrupted or you disconnect the AC power cord for more than one hour
You have to re-set the clock.

1-3. RECORDING TV PROGRAMMES



Recording TV Programmes

- 1 Press ⏻ on the video TV. When the STANDBY lamp is lit in red, skip this step.
- 2 Insert a cassette with a safety tab.
- 3 Select the programme position with PROG+/- . You can also use number buttons on the Remote Commander. For double-digit numbers (e.g. 14), first press +/-, then press 1 and 4.
- 4 Press REC ● . When you use the Remote Commander, press two REC ● buttons at the same time. The REC lamp on the front of the video TV lights up and recording begins.

To stop recording

Press STOP ■ .
When the tape reaches the end, the video TV rewinds the tape automatically to the beginning, then stops. This function does not work when the power of the video TV is off.

To pause recording

Press PAUSE ■ .
To resume recording, press PAUSE ■ again.

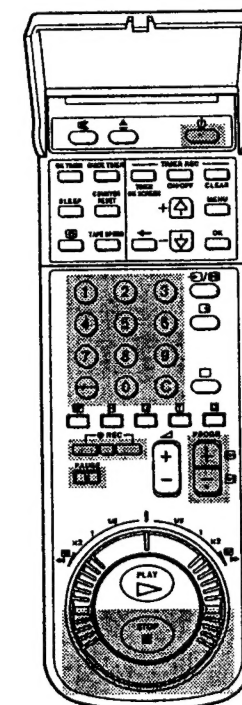
You can cut out an unwanted scene during recording with this button.

- 1 Press PAUSE ■ when an unwanted scene appears on the screen. Recording pauses.
- 2 Press PAUSE ■ again to release the pause mode at the desired scene. Recording resumes from the point set in step 1.

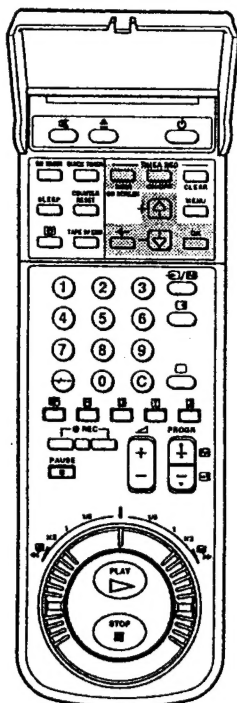
When the recording pause mode lasts for about 5 minutes, the video TV stops recording to protect the quality of video tapes.

Recording with the TV Off

Press ⏻ on the Remote Commander or ⏻ on the video TV. The TV screen is turned off and the STANDBY lamp lights up. The video TV continues recording.



1-4. RECORDING TV PROGRAMMES USING THE TIMER



The Timer Recording function allows you to preset your video TV to record up to six programmes within a one-month period.

Before you begin

- Switch on the video TV.
- Make sure that the time and date clock are set. If not, the message "Please set the clock" is displayed on the screen. Refer to "Setting the clock" on page 12.
- Make sure that the loaded cassette has its safety tab. If a cassette without safety tab is loaded, the message "Tape with safety tab is required for recording" is displayed.

Setting the Timer

Example: Here is how to record a programme broadcast on programme position 26 from 20:15 to 21:55 on Saturday, 6th July 1994.

- 1 Press **TIMER ON SCREEN**.
The **PROGRAMME LIST** appears.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

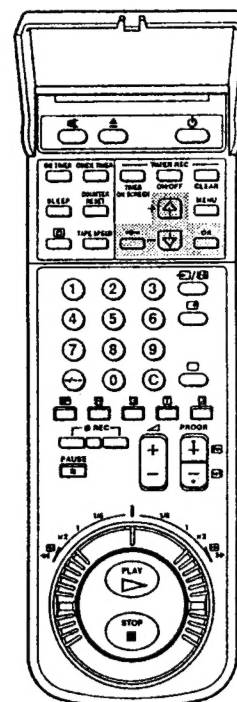
- 2 Press **OK**.
Today's date coloured red appears.

- 3 Press **+** until "6 WED" appears.
For daily and weekly recording see "Daily and weekly recording" on page 23.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

- 4 Press **OK**, then set the hour of the recording start time to "20" with **+** or **-**.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		



- 5 Press **OK**, then set the minute of the recording start time to "15" with **+** or **-**.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

- 6 Press **OK**, then set the hour of the recording stop time to "21" with **+** or **-**.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

- 7 Press **OK**, then set the minute of the recording stop time to "55" with **+** or **-**.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

- 8 Press **OK**, then set the programme position to "26" with **+** or **-**.

PROGRAMME LIST					20:00
DATE	START	STOP	PROG		
6 WED	20:15	21:55	26		
---	---	---	---		
---	---	---	---		
---	---	---	---		
---	---	---	---		

- 9 Press **OK**.
The cursor (▶) appears at the left margin.

- 10 When you want to set other programmes, press **-** to move down the cursor to the next line, then repeat steps 2 to 9.

- 11 Press **TIMER REC ON/OFF**.
The **TIMER REC** lamp on the front of the video TV lights up and the video TV enters timer recording standby mode.

Press **TIMER ON SCREEN** to erase the **PROGRAMME LIST**.

Turn off the video TV if you do not want to watch the TV.

The video TV turns on automatically and starts recording at the preset start time, and goes off at the preset stop time.

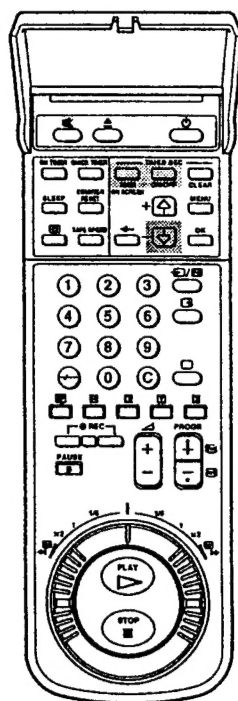
If you have made a mistake during timer setting

Press **←** to go back to the previous position and correct the setting.

If you try to enter the recording start time prior to the current time
All the items of the setting will be erased.

If you try to do incorrect operation

The video TV displays a message on the screen to interrupt your setting.



Daily/weekly recording

You can preset your video TV to record the same programme every day of the week (daily recording) or the same programme on the same day every week (weekly recording). Press ϕ in step 3 until the desired setting appears in the "DATE" position. With each press, the setting changes as follows:

4 (today) \rightarrow MON-SUN \rightarrow MON-SAT \rightarrow MON-FRI \rightarrow EVERY SAT \rightarrow EVERY FRI \rightarrow EVERY THU \rightarrow EVERY WED \rightarrow EVERY TUE \rightarrow EVERY MON \rightarrow EVERY SUN \rightarrow 3 (next month) \rightarrow 2.....

To stop timer recording

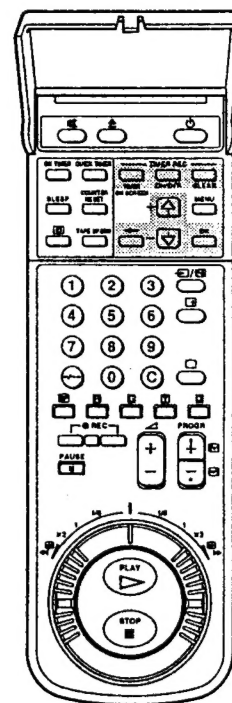
Press TIMER REC ON/OFF.

Using the Video TV before Timer Recording Starts

You can watch a TV programme, check the timer settings and reset the counter in timer recording standby mode. However, press TIMER REC ON/OFF to turn off the TIMER REC lamp on the front of the video TV to do the following operations:

- ejecting the cassette
- using the tape operation buttons
- changing or canceling the timer settings

Remember to press TIMER REC ON/OFF again to make the TIMER REC lamp light after the above operations.



Checking the Timer Settings

You can display the list of the timer settings which you preset.

Press TIMER ON SCREEN.
The PROGRAMME LIST appears.

PROGRAMME LIST				20:00
DATE	START	STOP	PROG	
6 WED	20:15	21:55	24	
7 THU	8:30	10:15	50	
MON SAT	23:00	0:00	1	
EVERY SUN	8:55	12:30	12	
---	---	---	---	
---	---	---	---	

Press TIMER ON SCREEN again to erase the PROGRAMME LIST.

Changing or Canceling the Timer Settings

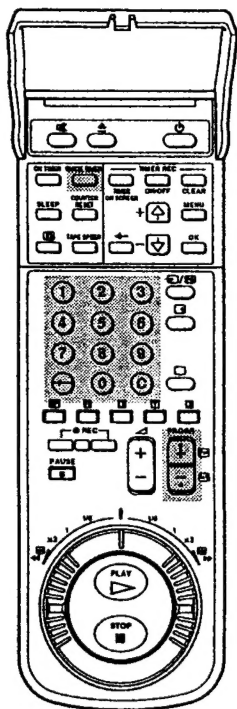
- 1 Press TIMER REC ON/OFF to turn off the TIMER REC lamp on the front of the video TV.
- 2 Press TIMER ON SCREEN to display the PROGRAMME LIST.
- 3 Select the setting you want to change or cancel with ϕ or ϕ .

PROGRAMME LIST				20:00
DATE	START	STOP	PROG	
6 WED	20:15	21:55	24	
7 THU	8:30	10:15	50	
MON SAT	23:00	0:00	1	
EVERY SUN	8:55	12:30	12	
---	---	---	---	
---	---	---	---	

- 4 To change the setting
Using ϕ or ϕ and OK, re-enter all the items.
Refer to "Setting the timer" steps 2 to 9 on pages 21 and 22.

To cancel the setting
Press TIMER REC CLEAR.

- 5 Press TIMER ON SCREEN to go back to the original screen.
- 6 If there are other timer settings on the list, press TIMER REC ON/OFF to set the video TV to timer recording standby mode.



To change the recording time period after quick-timer recording begins

Press QUICK TIMER until the desired time period appears.

To display the remaining time period during quick-timer recording

Press **[3]**. The recording time period decreases minute by minute.

To stop quick-timer recording

Press TIMER REC ON/OFF.

Recording Using the Quick-Timer

You can preset your video TV to start timer recording immediately and to automatically stop recording after a specific time period. If you have not set the clock, quick-timer recording cannot be done.

If you are recording

- 1 Press QUICK TIMER on the Remote Commander. The "QUICK TIMER 0:00" appears on the screen.
- 2 Press QUICK TIMER repeatedly to select the recording time period. With each press, the time period changes as follows:

0:00 → 0:30 → 1:00 → → 3:30 → 4:00

Even if you switch off the video TV, it continues recording. After the selected time period has elapsed, recording stops automatically.

If you are not recording

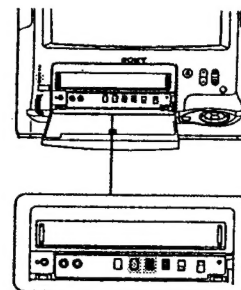
- 1 Switch on the video TV.
- 2 Insert a cassette with its safety tab.
- 3 Select the programme position which you want to record.
- 4 Press QUICK TIMER on the Remote Commander. The "QUICK TIMER 0:00" appears on the screen.
- 5 Press QUICK TIMER repeatedly to select the recording time period. With each press the time period changes as follows:

0:00 → 0:30 → 1:00 → → 3:30 → 4:00

The time period turns yellow and recording starts.

Even if you switch off the video TV, it continues recording.

When the preset time period has elapsed, the video TV stops recording.



Timer Recording with VPS Signals (KV-V1410D Models only)

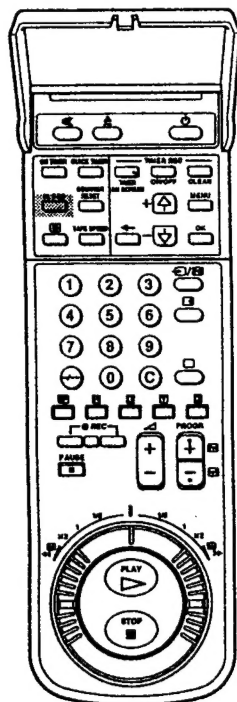
The German broadcasting system transmits VPS (Video Programme System) signals with the TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording stops. As soon as the interrupted programme resumes, recording starts again.

- 1 If the TIMER REC lamp is lit on the front panel, press TIMER REC ON/OFF to turn it off.
- 2 Before setting the timer, press VPS on the inside of the front panel so that the VPS lamp lights up.
- 3 Set the timer following the steps in "Setting the timer" (pages 21 to 23).

Notes on VPS recording

- If recording times overlap due to a VPS time shift, the programme that was broadcast first has priority. Recording of the second programme begins when the first programme has finished.
- If the video TV could not receive a VPS signal because it was too weak or because the station failed to transmit VPS signals, timer recording is made without the VPS function.

1-5. SWITCHING OFF AUTOMATICALLY — SLEEP TIMER



You can automatically switch the video TV into standby mode after a selected time period.

Press SLEEP.

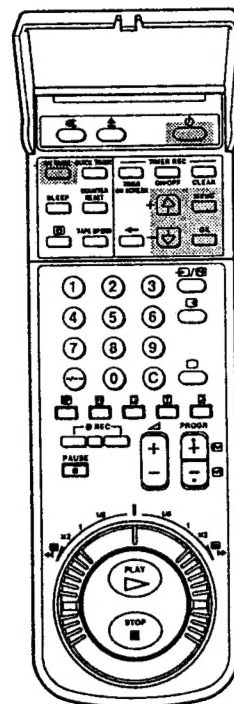
With each press, the time period (in minutes) changes as follows:

OFF → 30 → 60 → 90

One minute before the TV switches into standby mode, a message "Good night" is displayed on the screen.

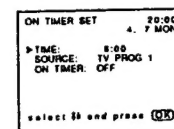
To cancel the timer
Press SLEEP to select "OFF".

1-6. SWITCHING ON AT YOUR DESIRED TIME — ON TIMER

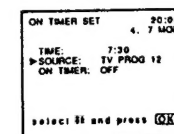


You can preset your video TV to automatically switch on at a desired time. You can select the TV programme or video playback to be switched on.


- 1 Press MENU to display the main menu.
- 2 Move the cursor to "ON TIMER SET" with + or - and press OK. The ON TIMER SET menu appears.



- 3 Press OK. The timer setting hour section turns red.
- 4 Set the hour with + or - and press OK. The minute section turns red.
- 5 Set the minutes (by one minute) with + or - and press OK. The cursor appears beside "TIME."
- 6 Move the cursor to "SOURCE" with + or - and press OK.
- 7 Select TV or VCR (video playback) to be switched on with + or - and press OK. When you select TV, select the programme position with + or - and press OK.

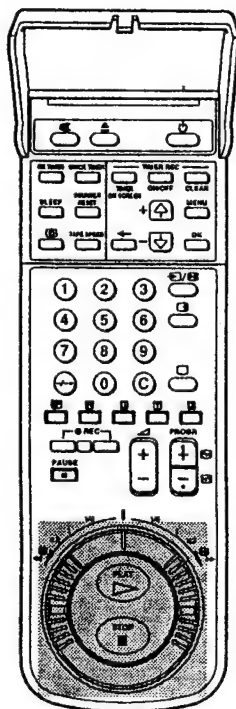


- 8 Move the cursor to "ON TIMER" with + or - and press OK, then select ON with + or - and press OK.
- 9 Press MENU to go back to the original screen.
- 10 Press ON TIMER.

The ON TIMER lamp on the front of the video TV lights up. If you are not using the video TV, press  on the Remote Commander to set the video TV in standby mode.

At the preset time, the video TV automatically switches on and a message "Good morning" is displayed for five minutes. If you do not press any button for 2 hours, the video TV automatically shuts off.

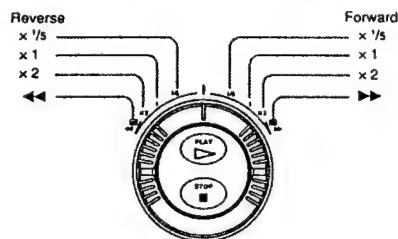
1-7. PLAYING/SEARCHING A TAPE AT VARIOUS SPEEDS



You can play a tape at various speeds. It is convenient to locate a desired scene.

Changing the Speed and Direction of Playback Using the DUAL MODE SHUTTLE Ring

During playback or playback pause, turn the ring and hold it. To play forward, turn it clockwise, and turn it counterclockwise to play in reverse. Playback speed is selected according to the turning angle as shown in the illustration below.



When you release the ring, normal playback or playback pause is resumed.

Picture Search

During playback, turn the DUAL MODE SHUTTLE ring to ◀◀ (rewind) or ▶▶ (fast forward) and hold it.

A high-speed picture appears on the TV screen.

To resume normal playback, release the DUAL MODE SHUTTLE ring at the desired scene.

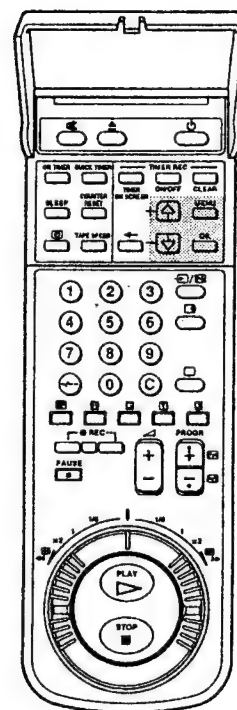
Viewing the Tape in Fast Forward or Rewind Mode

Turn the DUAL MODE SHUTTLE ring clockwise to ▶▶ during fast forward or counterclockwise to ◀◀ during rewind.

While you hold the ring, you can view the picture.

When you release the ring, fast forward or rewind mode is resumed.

1-8. ENHANCING VIDEO PICTURE QUALITY



Adjusting the Tracking

Adjusting the Tracking Automatically

The tracking condition is automatically adjusted on this video TV. The AUTO TRACKING indicator will appear while the video TV is searching for best tracking condition.

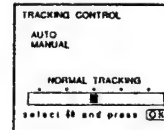
Adjusting the Tracking Manually

If streaks or snow noise appear on the video playback picture, adjust the tracking condition manually.

- 1 Press MENU to display the main menu.
- 2 Move the cursor to "TRACKING CONTROL" with + or - and press OK. The TRACKING CONTROL menu appears.

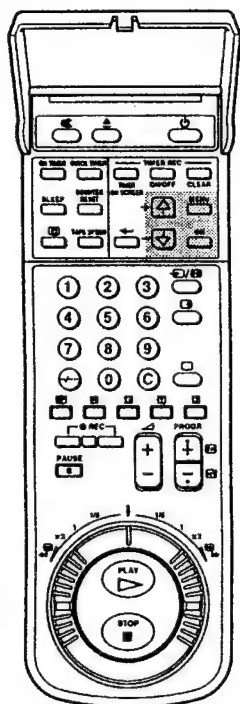


- 3 Select MANUAL with + or - and press OK. The tracking meter appears.



- 4 Using + or -, adjust the tracking to get the best picture.
- 5 Press OK. The main menu reappears.
- 6 Press MENU to go back to the original screen.

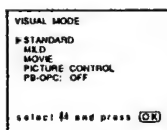
To go back to automatic tracking
Select AUTO in the TRACKING
CONTROL menu with + or - and
press OK.



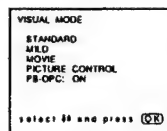
Adjusting with the Optimum Picture Control (OPC)

This function allows you to improve playback quality by adjusting the system parameter automatically according to the condition of the video tape. This function is set to ON at the factory. To maintain better picture quality, it is advisable to leave the function on so that the OPC lamp remains lit. The OPC function works on all types of tapes, even on rental tapes. To change the setting, use the menu display.

- 1 Press MENU to display the main menu.
- 2 Move the cursor to VISUAL MODE with + or - and press OK. The VISUAL MODE menu appears.



- 3 Move the cursor to PB-OPC with + or - and press OK.
- 4 Select ON or OFF with + or - and press OK.



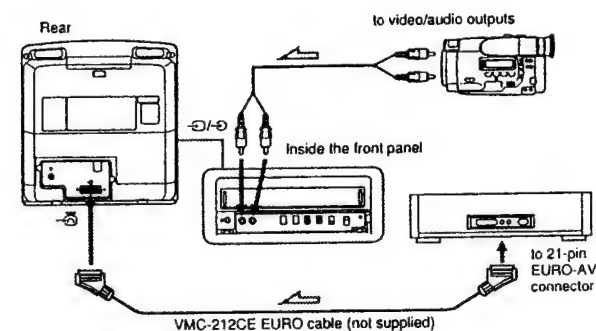
- 5 Press MENU to erase the main menu.

About the Auto Head Cleaner

The auto head cleaner built into this set automatically cleans the video heads when a cassette is loaded or unloaded. If the effect of head cleaning is not sufficient even after a cassette has been loaded/unloaded several times, clean the heads using the Sony V-25CL video head cleaning cassette. For details on head cleaning see page 35.

1-9. CONNECTING OPTIONAL EQUIPMENT

Watching the Picture Input from Optional Equipment



To watch the video input signal

Press \odot repeatedly until the desired input indicator appears on the screen.

- $\odot 1$ for audio/video input or RGB input (KV-V1410D models only) through the \odot connector
- $\odot 2$ for audio/video input through the \odot/\odot jacks on the front

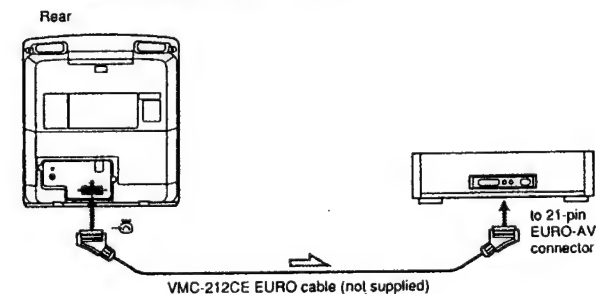
Editing with Another VCR

Using an additional VCR, you can edit a tape.

Editing from another VCR

Connections are the same as in "Watching the picture input from optional equipment."

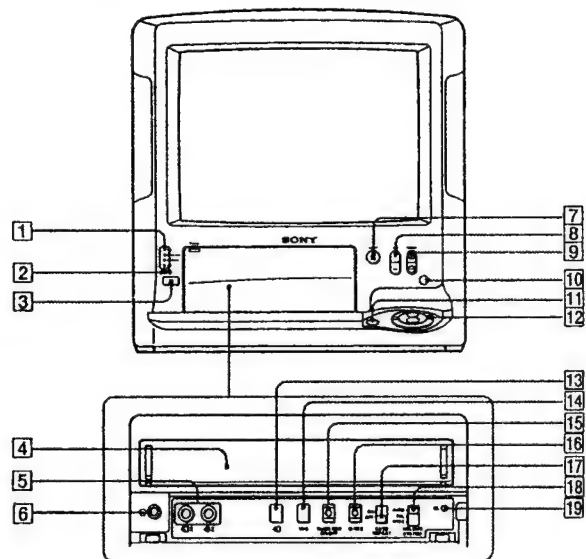
Editing onto another VCR



1-10. INDEX TO PARTS AND CONTROLS

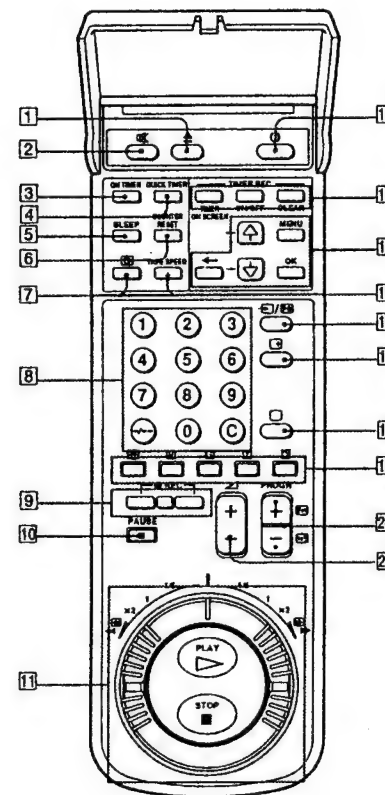
Video TV Set—Front

This section briefly describes the buttons and controls on the video TV set and on the Remote Commander. For more information, refer to the pages next to each description.



- | | |
|--|---|
| 1 Lamps
REC(recording) (page 20)
TIMER REC(recording) (page 23)
ON TIMER (page 28)
VPS (KV-V1410D models only) (page 26) | 10 Remote sensor |
| 2 ⏻ (standby) lamp (page 13) | 11 PAUSE button (pages 18, 20) |
| 3 ⏻ (main power) switch (page 6, 13) | 12 DUAL MODE SHUTTLE ring (pages 18, 29) |
| 4 Cassette compartment (page 17) | 13 -□- (input select) button (pages 16, 32) |
| 5 -□- (video/audio input) jacks (page 32) | 14 VPS button (KV-V1410D models only) (page 26) |
| 6 ♀ (headphones) jack (page 16) | 15 TIMER REC ON/OFF button (pages 23, 24) |
| 7 EJECT ⏏ button (page 17) | 16 REC(recording) ● button (page 20) |
| 8 ∇ (volume) +/- buttons (page 13) | 17 AUTO REPEAT ON/OFF switch (page 19) |
| 9 PROGR(programme) +/- buttons (page 13) | 18 COLOUR SYSTEM switch (page 18) |
| | 19 CL (clear) button (page 34) |

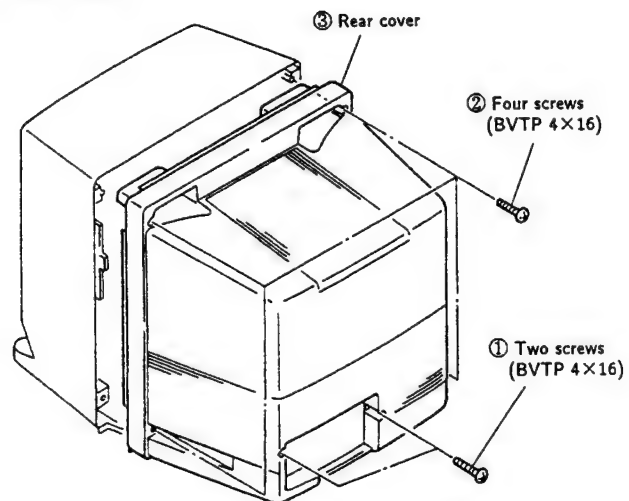
Remote Commander



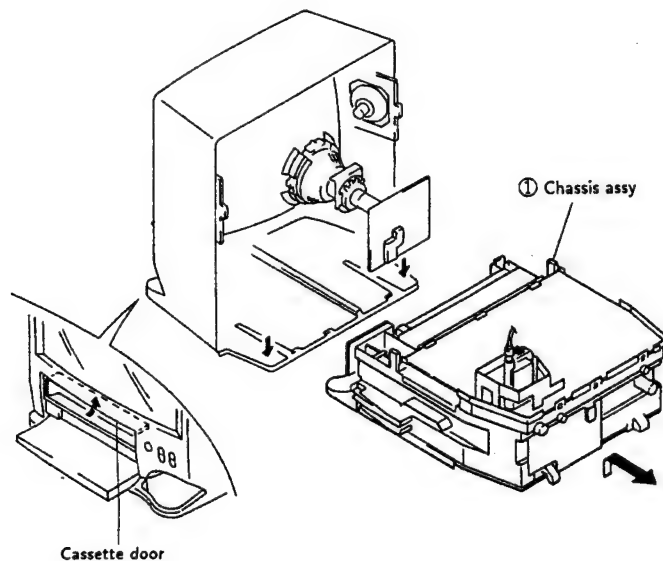
- | | |
|--|--|
| 1 ⏏ (eject) button (page 17) | 12 ⏻ (standby) button (pages 6, 13) |
| 2 * (muting) button (page 14) | 13 TIMER REC buttons
TIMER ON SCREEN (pages 21, 24)
ON/OFF (pages 23, 24)
CLEAR (page 24) |
| 3 ON TIMER button (page 28) | 14 Menu operation buttons (page 6)
MENU
+ ∇ / - ∇
←
OK |
| 4 QUICK TIMER button (page 25) | 15 TAPE SPEED button
The button does not function on this video TV. |
| 5 SLEEP button (page 27) | 16 -□- (input select)/⏏ button (pages 16, 32) |
| 6 COUNTER RESET button (page 19) | 17 -□- (on-screen display) button (page 14, 19) |
| 7 ⌚ (time display) button (pages 16) | 18 □ (TV power on/TV mode select) button (pages 6, 13) |
| 8 Number button (page 7, 13) | 19 Teletext operation buttons
The buttons do not function on this video TV. |
| 9 REC (recording) ● buttons (page 20) | 20 PROG (programme) +/- /⏏/⏏ buttons (page 13) |
| 10 PAUSE button (pages 18, 20) | 21 ∇ (volume) +/- buttons (page 13) |
| 11 DUAL MODE SHUTTLE ring (pages 18, 29) | |

SECTION 2 DISASSEMBLY

2-1. REAR COVER REMOVAL

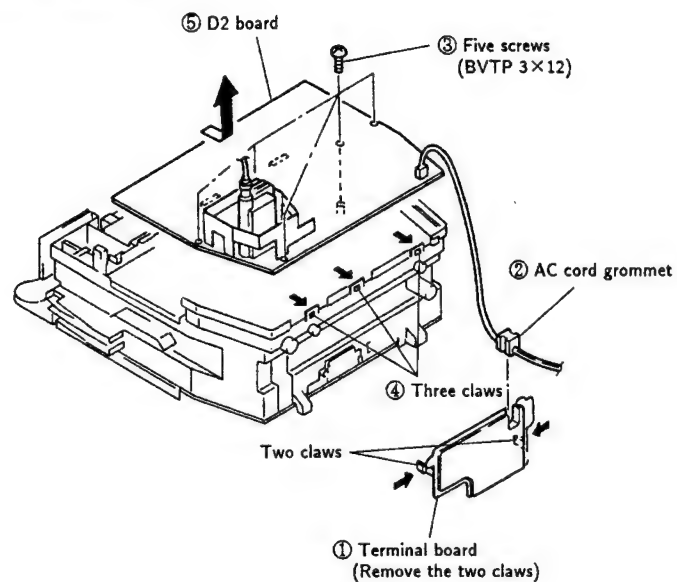


2-2. CHASSIS ASSY REMOVAL

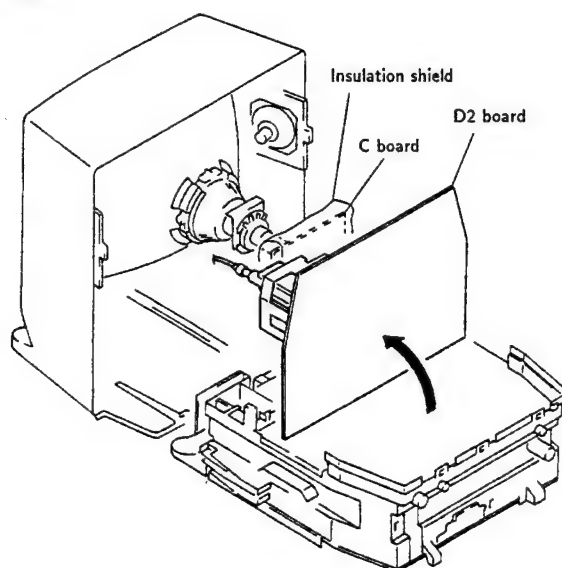


※ Open the cassette door and fit the chassis ass'y in there.

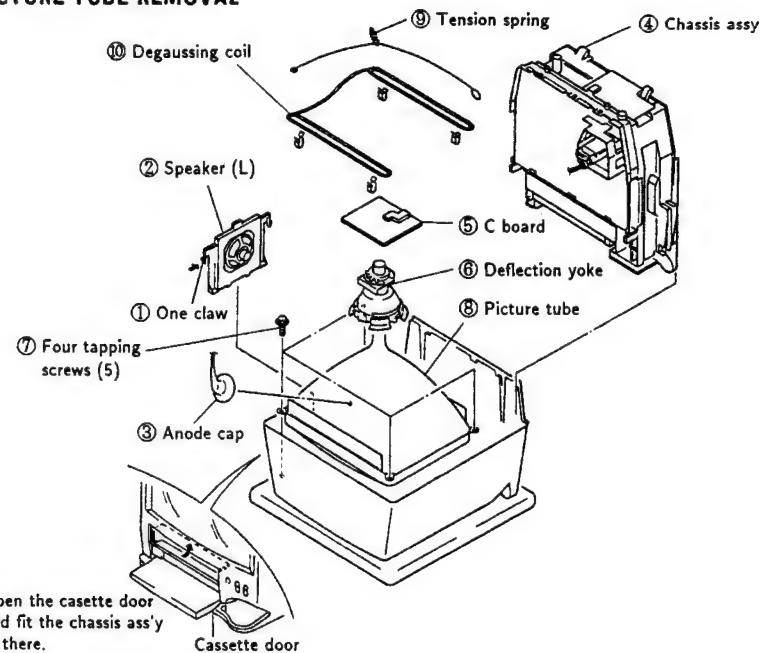
2-3. D2 BOARD REMOVAL



2-4. SERVICE POSITION



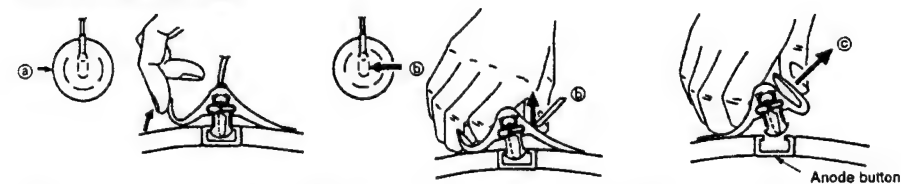
2-5. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

NOTE : Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT chield or carbon painted on the CRT, after removing the anode.

• REMOVING PROCEDURES



- ① Turn up one side of the rubber cap in the direction indicated by the arrow ②.
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ②.
- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling up it in the direction of the arrow ③.

• HOW TO HANDLE AN ANODE-CAP

- ① Don't hurt the surface of anode-caps with sharp shaped material!
- ② Don't press the rubber hardly not to hurt inside of anode-caps!
A material fitting called as shutter-hook terminal is built in the rubber.
- ③ Don't turn the foot of rubber over hardly!
The shutter-hook terminal will stick out or hurt the rubber.



SECTION 3

SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

1. Beam Landing
2. Convergence
3. Focus
4. Screen (G 2) and White Balance

Note: Test Equipment Required.

1. Color bar Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter

The controls and switch should be set as follows unless otherwise noted:

PICTURE control..... normal
BRIGHTNESS control..... normal

Perform the adjustments in order as follows:

Preparation:

- Feed in the white pattern signal.
- Before starting, degauss the entire screen.

3-1. BEAM LANDING

1. Input a raster signal with the pattern generator.
2. Loosen the deflection yoke mounting screw, and set the purity control to the center as shown in Fig.2
3. Turn the raster signal of the pattern generator to green.
4. Move the deflection yoke backward, and adjust with the purity control so that green is in the center and red and blue are at the sides evenly. (Fig.3)
5. Move the deflection yoke forward, and adjust so that the entire screen becomes green. (Fig.1)
6. Switch over the raster signal to red and blue and confirm the condition.
7. When the position of the deflection yoke is determined, tighten it with the deflection yoke mounting screw.
8. When landing at the corner is not right, adjust by using the disk magnets. (Fig.4)

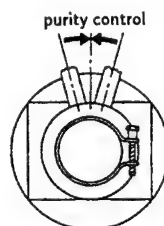


Fig.2

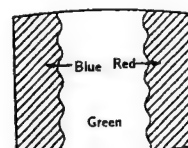


Fig.3

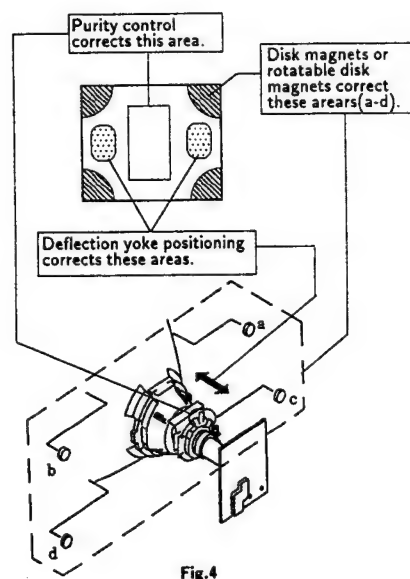


Fig.4

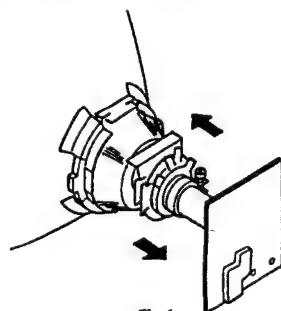


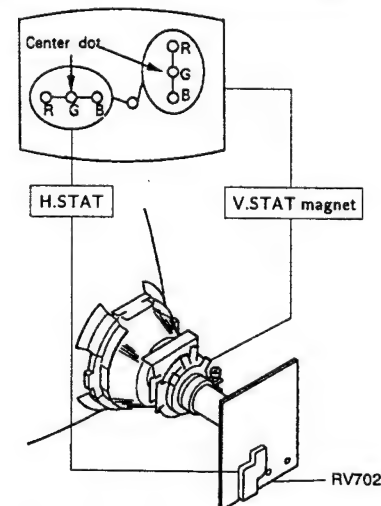
Fig.1

3-2. CONVERGENCE

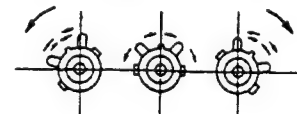
Preparation:

- Before starting, perform FOCUS, V.LIN and V.SIZE adjustment.
- Set BRIGHTNESS control to minimum.
- Feed in dot pattern.

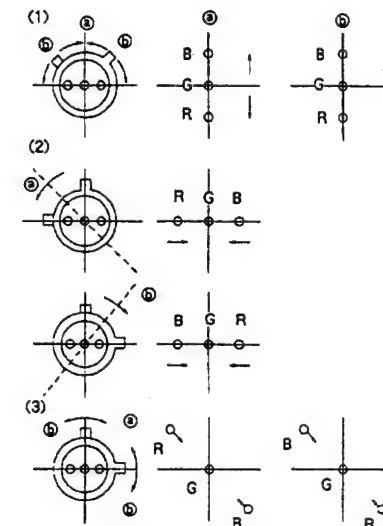
(1) Horizontal and Vertical Static Convergence



1. Adjust H.STAT VR to converge red, green and blue dots in the center of the screen. (Horizontal movement)
2. Adjust V. STAT magnet to converge red, green and blue dots in the center of the screen. (Vertical movement)
3. If the red, green and blue dots do not converge on the center of screen with H.STAT VR, perform horizontal convergence adjustment using H.STAT VR and V.STAT magnet as shown below. (In this case, H.STAT VR and V.STAT magnet effect each other.)
- Tilt the V.STAT magnet and adjust static convergence to open or close the V.STAT magnet.



4. When the V.STAT magnet is moved in the direction of arrow (a) and (b), red, green and blue dots move as shown below.

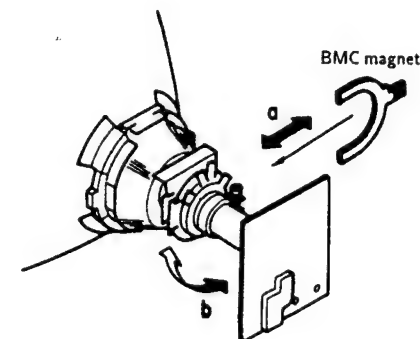


If the blue dot does not converge with red and green dots, perform following steps.

Move BMC magnet (a) to correct insufficient H.static convergence.

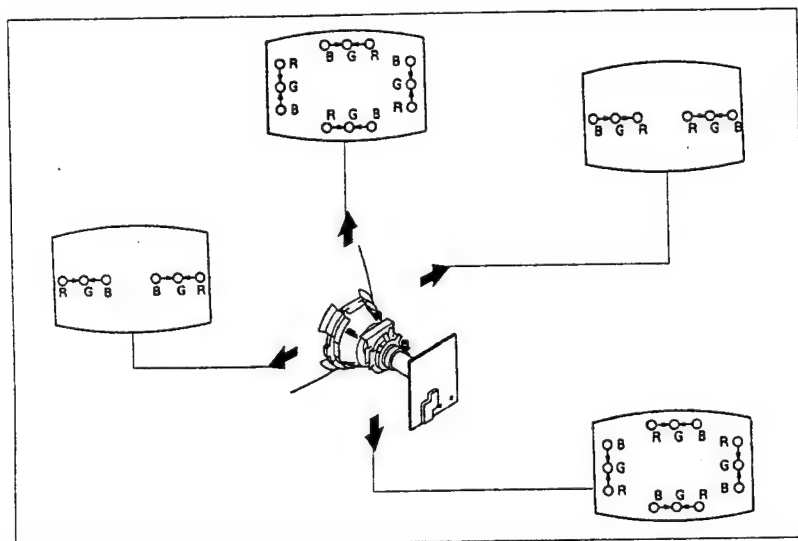
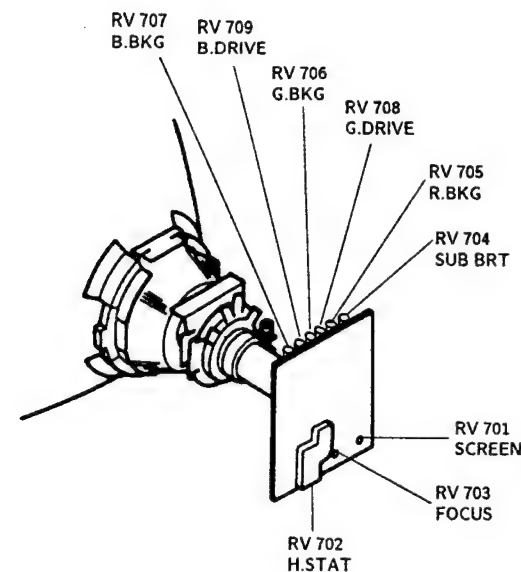
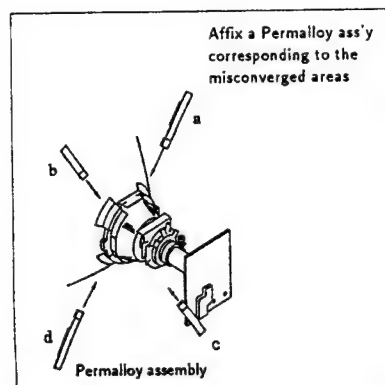
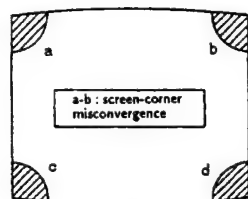
Rotate BMC magnet (b) to correct insufficient V.static convergence.

In either case, repeat Beam Landing Adjustment.



(2) Dynamic Convergence Adjustment**Preparation:**

- Before starting perform Horizontal and Vertical static convergence Adjustment.
1. Slightly loosen deflection yoke screw.
 2. Remove deflection yoke spacers.
 3. Move the deflection yoke for best convergence as shown below.
 4. Tighten the deflection yoke screw.
 5. Install the deflection yoke spacers.

**(3) Screen-corner Convergence****3-3. FOCUS**

Adjust RV 703 FOCUS control for best picture.

3-4. SCREEN(G2) and WHITE BALANCE [SCREEN(G2)]

1. Input a dots pattern.
2. Set the PIC, BRT controls at minimum.
3. Supply DC 165V by equipment into R, G, and B cathode.
4. Adjust RV701 (SCREEN) so that the raster is invisible.

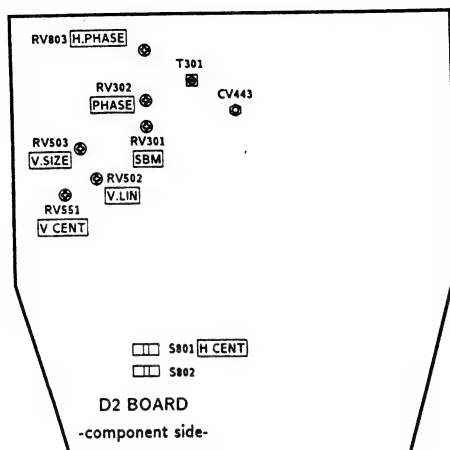
[WHITE BALANCE]

1. Input a all white signal.
2. Set the PIC control to minimum and set the BRT control at normal.
3. Turn RV 708 (G.DRIVE) and RV 709 (B.DRIVE) fully clockwise.
4. Adjust BKG controls for best white balance.
5. Set the PICTURE control to maximum. Observe the screen and adjust the DRIVE controls for best white balance.
6. Repeat steps 4 and 5.

SECTION 4

CIRCUIT ADJUSTMENTS

4-1. D2 BOARD ADJUSTMENT



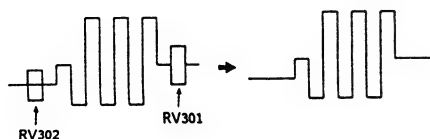
A • P • C ADJUSTMENT (CV443)..... (PAL)

1. Short circuit between pin ④ and pin ⑦ of IC301 with jumper.
2. Input the PAL color-bar signal.
3. Set the PIC, COL, and BRT controls to normal.
4. Adjust CV443 for suitable color synchronization.
5. Remove a jumper.

ANTI PAL, LINE CRAWLING ADJUSTMENT (RV301, RV302, T301)

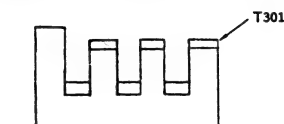
• ANTI PAL ADJUSTMENT

1. Input the PAL special color pattern signal.
2. Set the PIC, COL and BRT controls to normal.
3. Connect the oscilloscope to pin ⑦ of IC301. (B OUT)
4. Adjust RV301 (DELAY) and RV302 (PHASE) to obtain the waveform as shown below.



• LINE CRAWLING ADJUSTMENT

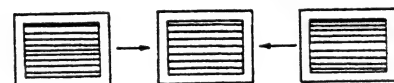
1. Input the PAL color-bar signal.
2. Set the PIC, COL and BRT controls to normal.
3. Connect the oscilloscope to pin ⑦ of IC301.
4. Adjust T301 for minimum line crawling.



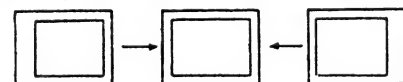
RV503 V.SIZE (VERTICAL SIZE)



RV502 V.LIN (VERTICAL LINEARITY)



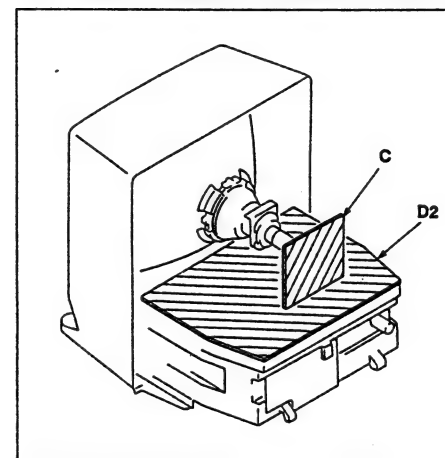
S801, S802, RV803 H.PHASE (HORIZONTAL CENTER)



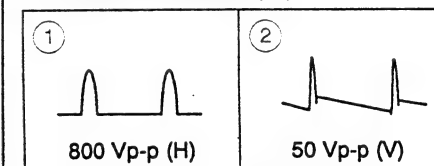
RV551 V.CENT (VERTICAL CENTER)



5-2. CIRCUIT BOARDS LOCATION (TV SECTION)



• D2 BOARD WAVEFORMS (1/2)



Schematic diagram

D2 board (1/2) →

5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS (TV SECTION)

Note:

- All capacitors are in μF unless otherwise noted. pF : μpF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms. $\text{k}\Omega$ = 1000 Ω , $\text{M}\Omega$ = 1000 $\text{k}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm
Rating electrical power 1/4 W (CHIP: 1/10W)

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a 10M Ω digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- * : Can not be measured.
- Circled numbers are waveform references.
- : B+ bus.
- : B- bus.
- : signal path.

Note: The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

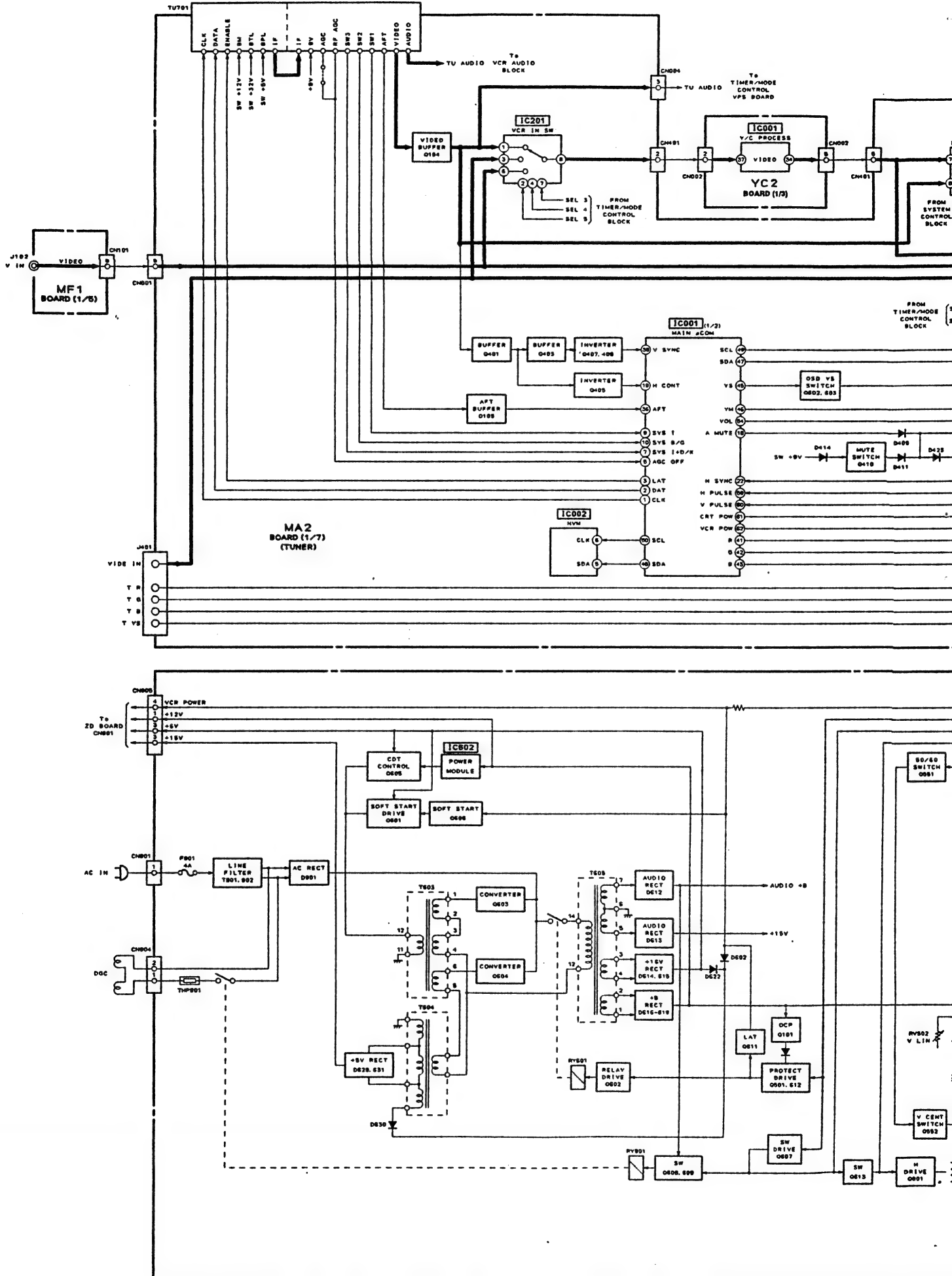
Reference Information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	:	ADJUSTMENT RESISTOR
COIL	: LF-SL	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

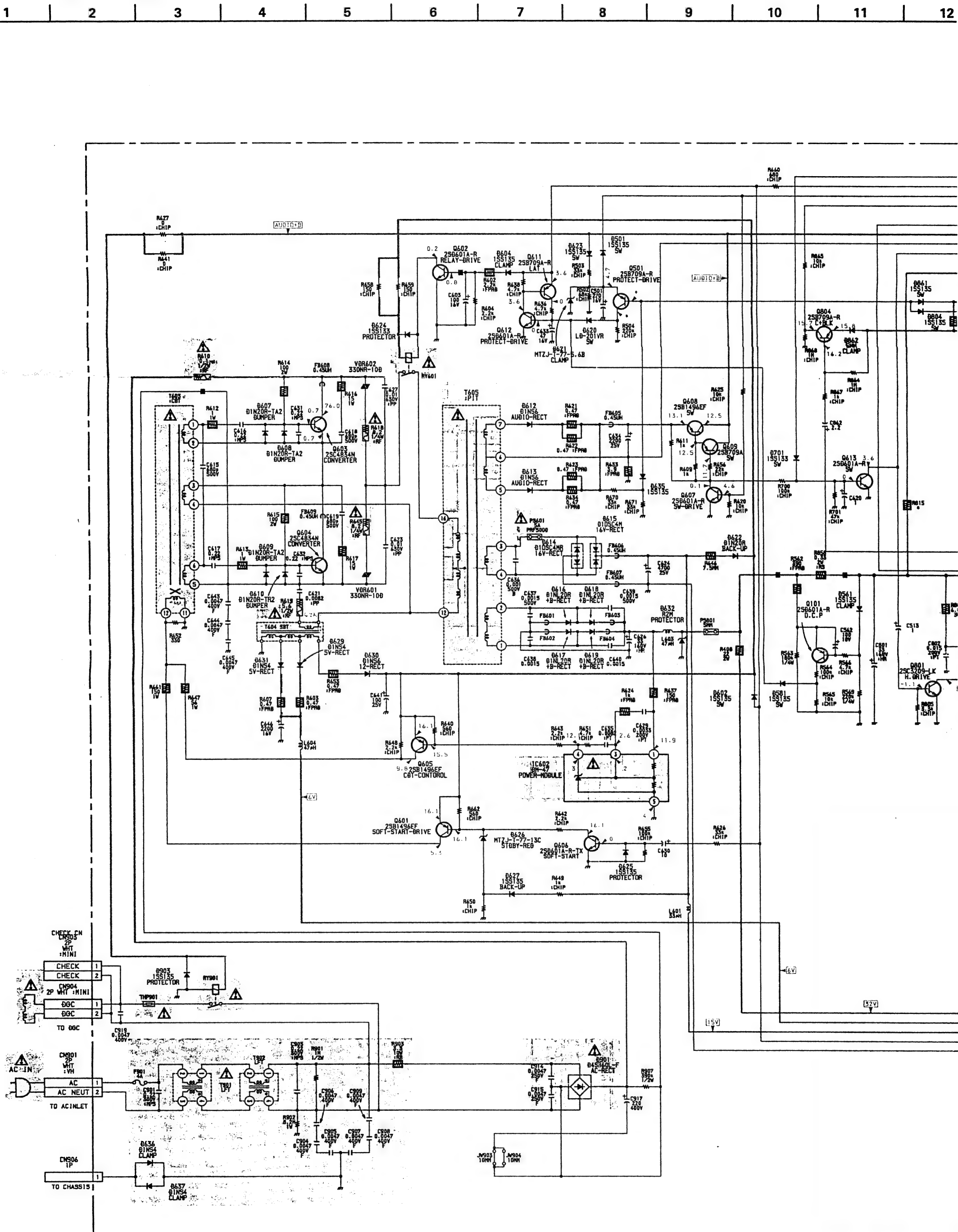
SECTION 2 DISASSEMBLY

5-1. BLOCK DIAGRAM (TV SECTION)

* Refer to the FRAME SCHEMATIC DIAGRAM (• See page 77)

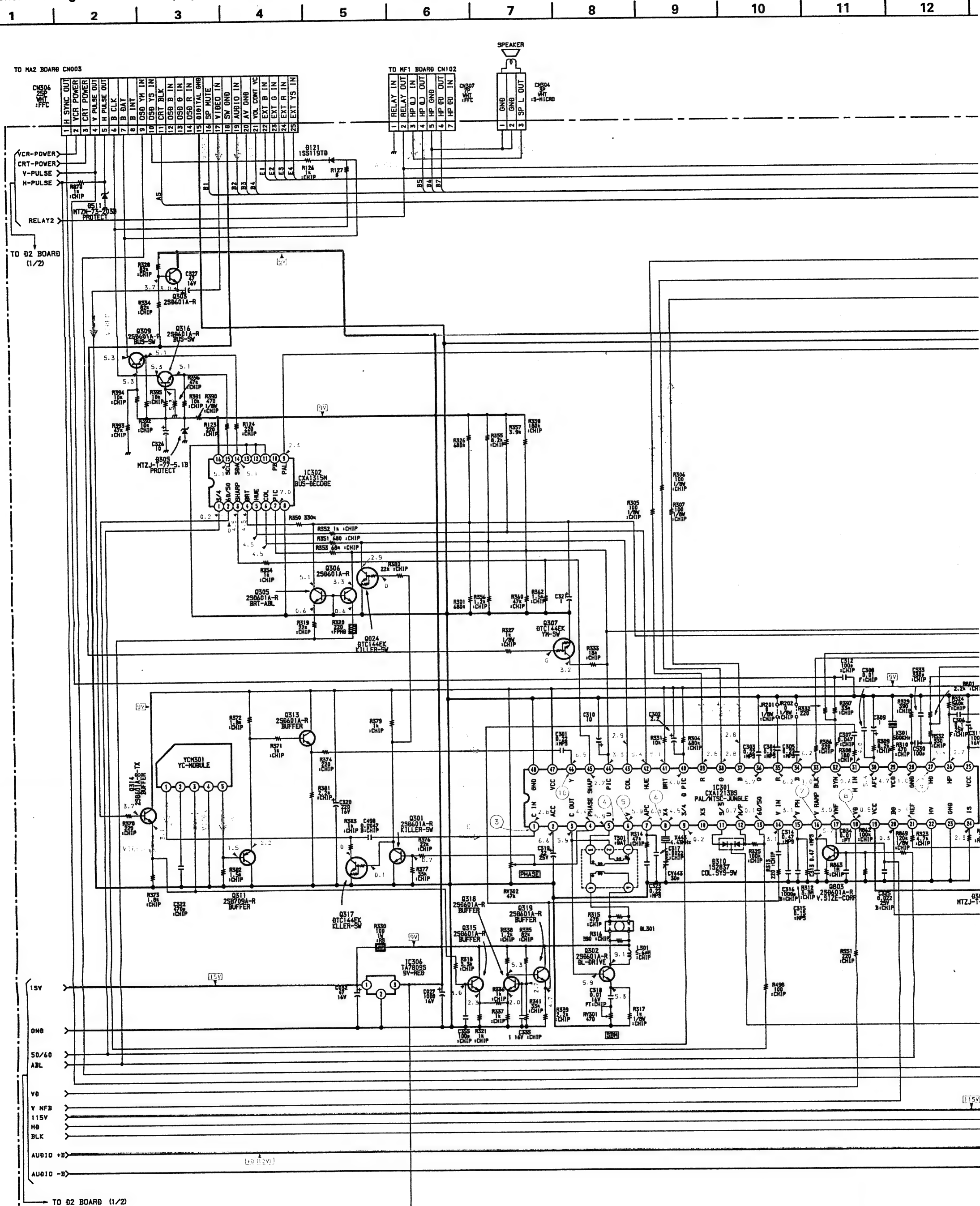


(1) Schematic Diagram of D2 Board (1/2)





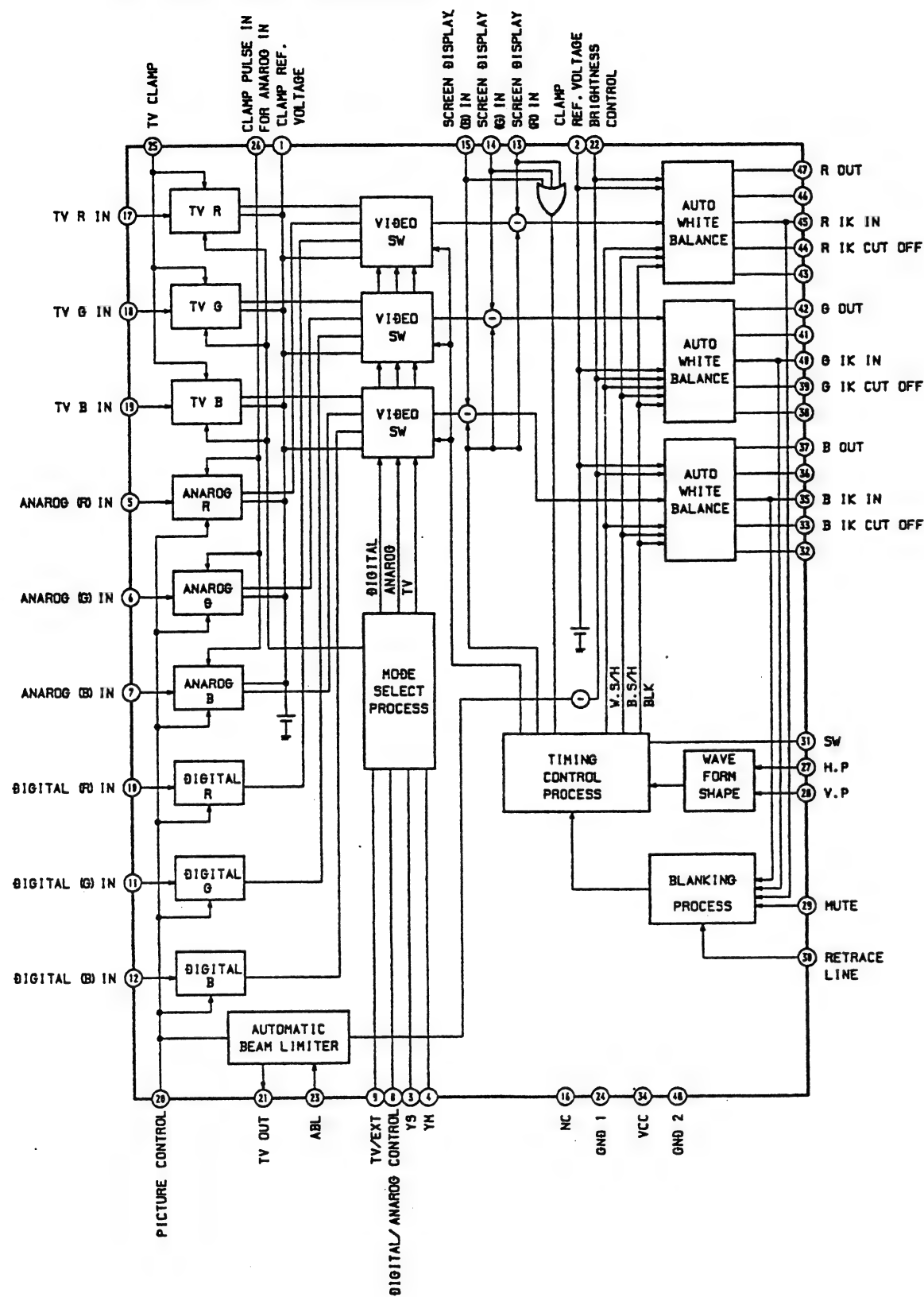
2) Schematic Diagram of D2 Board (2/2)



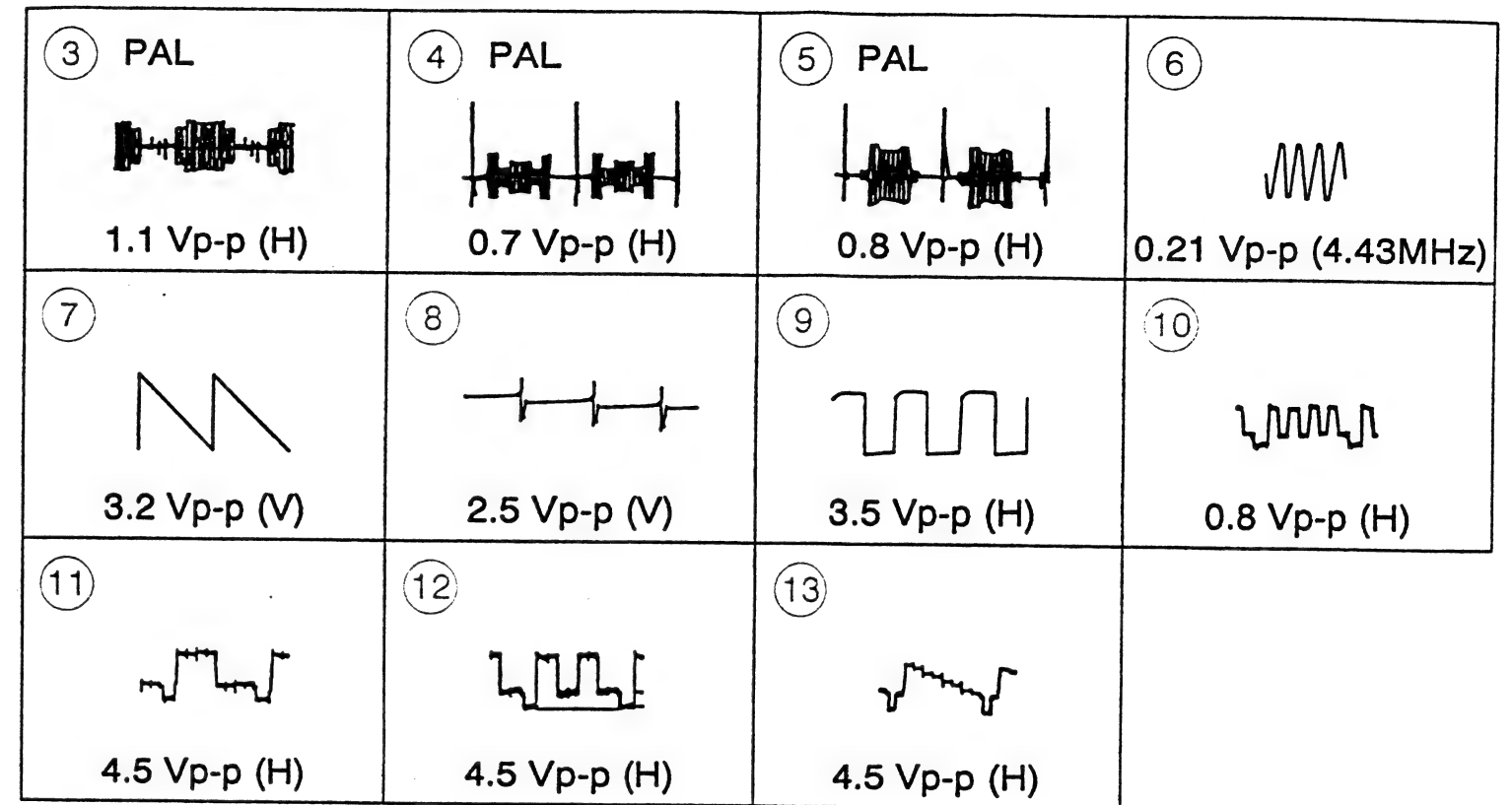
D2 (2/2)
(TV MAIN PCB)



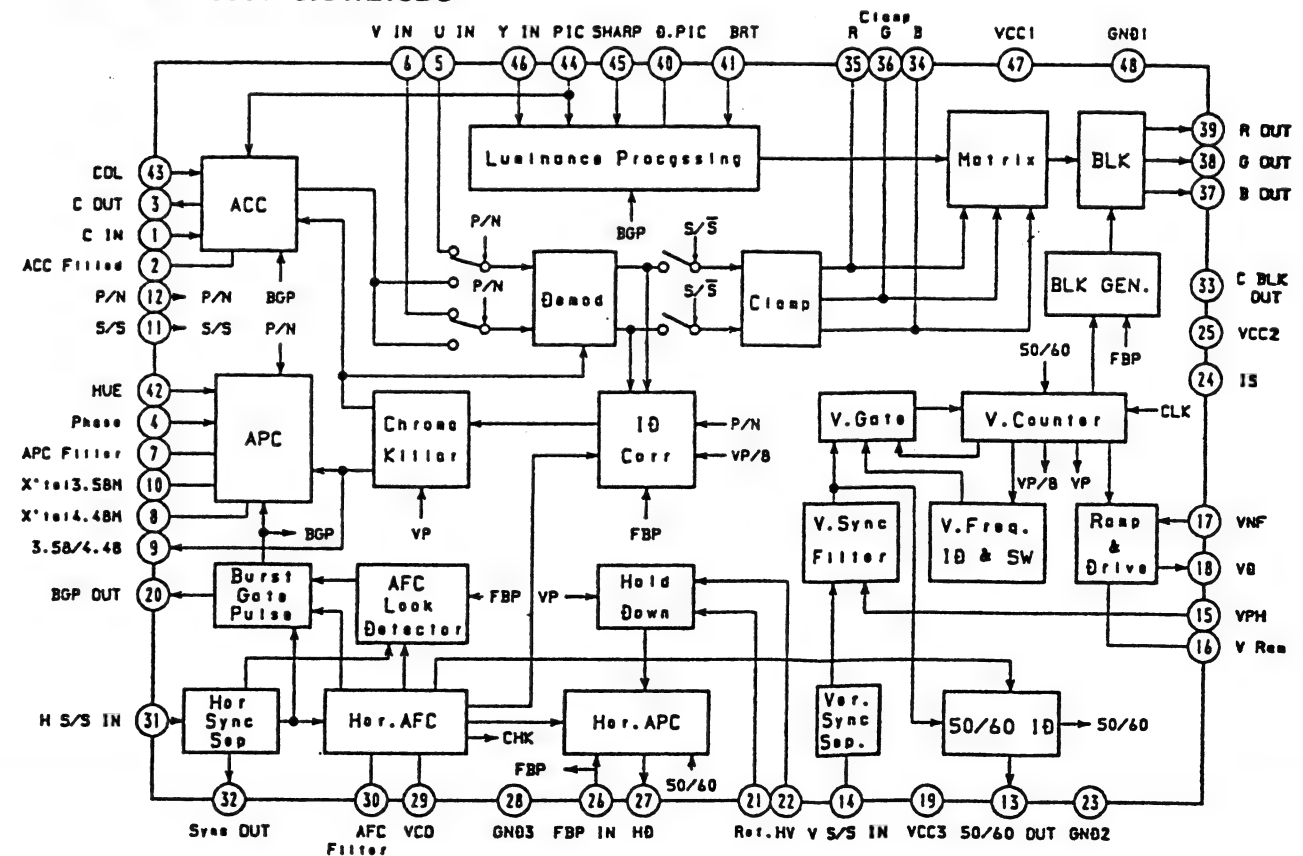
D2 Board IC304 CXA1024S



D2 BOARD WAVEFORMS (2/2)

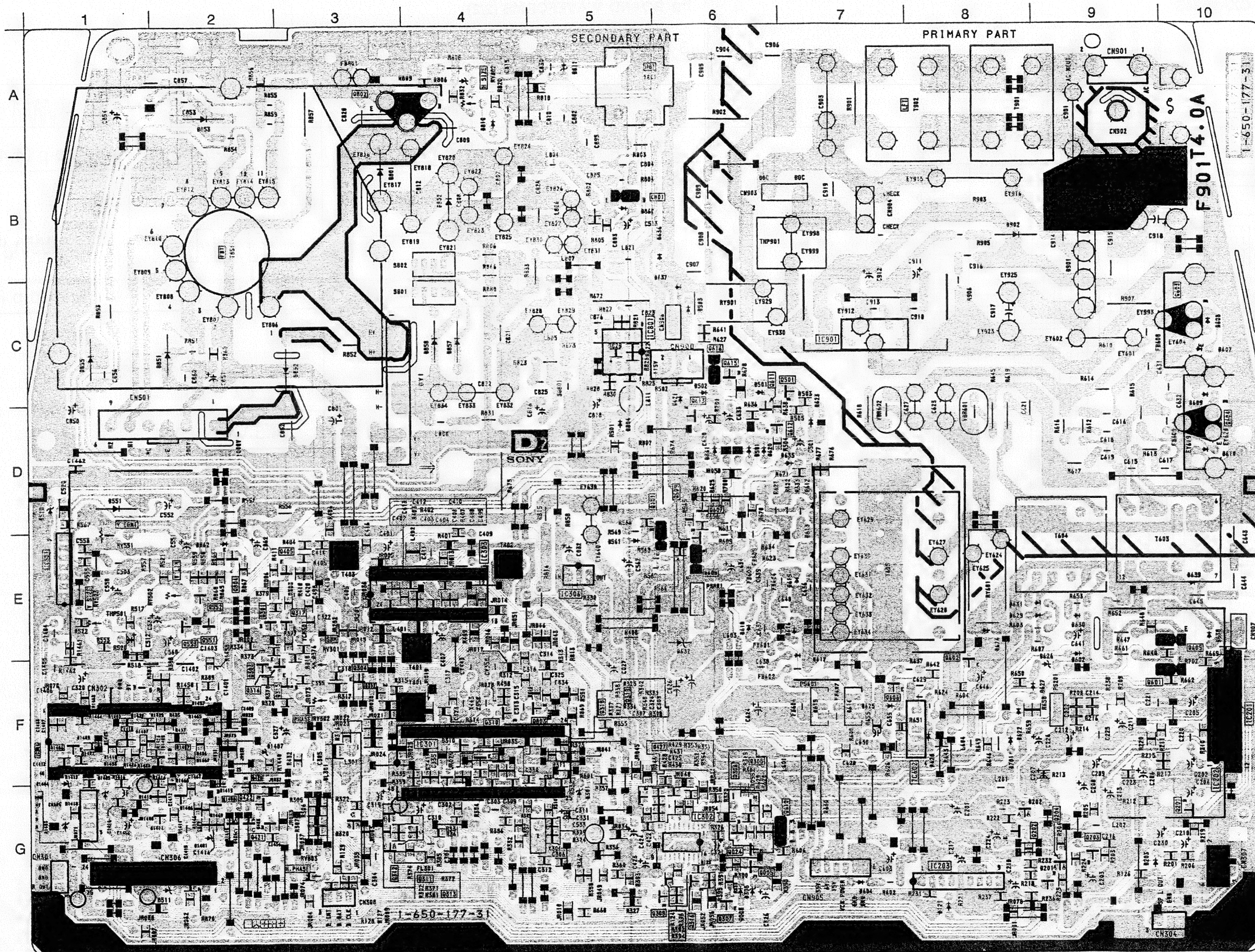


D2 Board IC301 CXA1213BS



- D2 Board -

D2 TV MAIN PCB
V.OUT, H.OUT
POWER



Schematic diagram

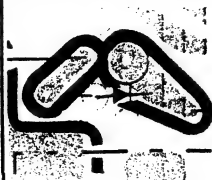
Schematic diagram

← D2 board (2/2)

C board →

• D2 BOARD

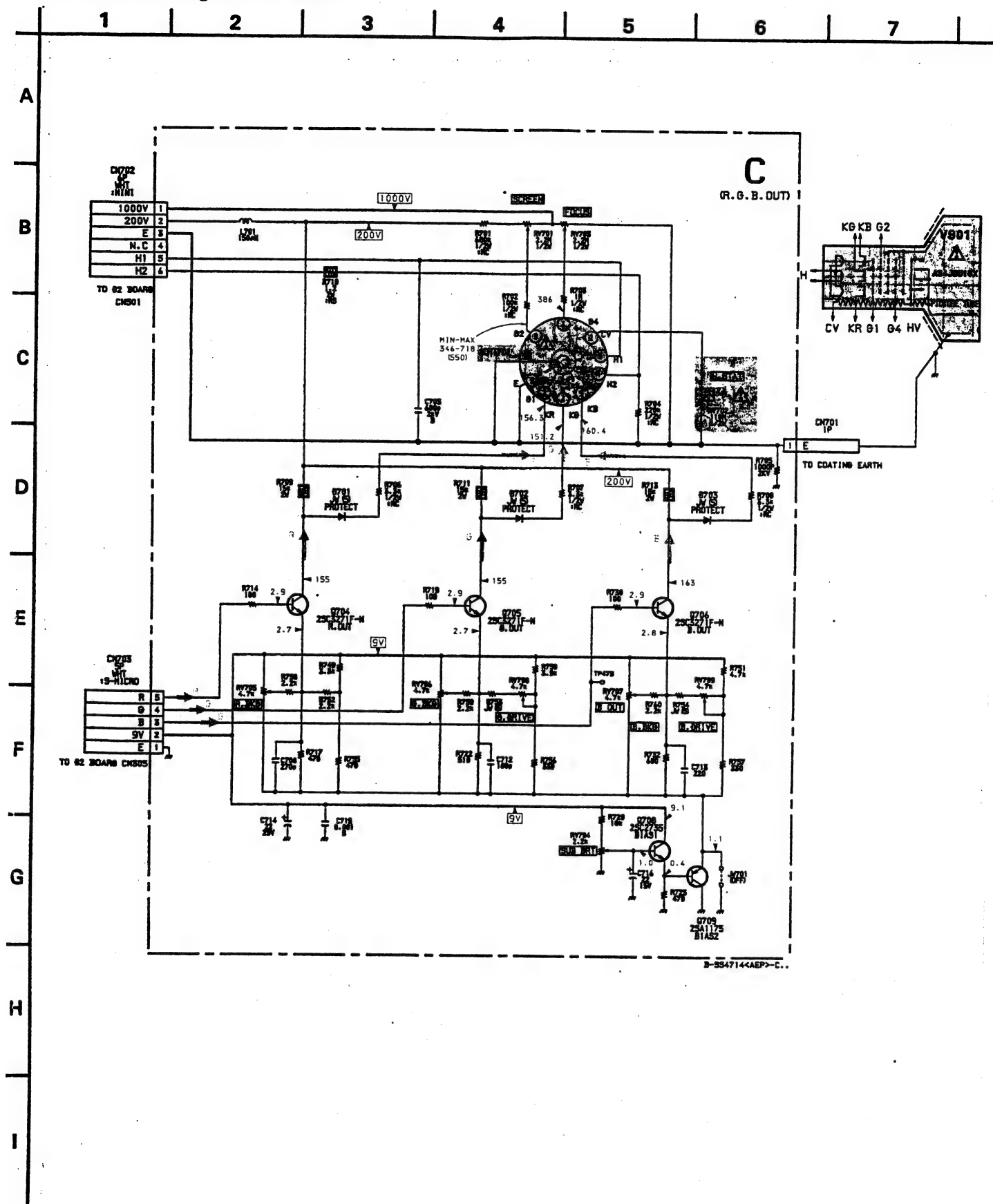
IC		Q311	E-3	Q1406	D-1	D615	D-5	D858	B-3
		Q313	E-3	Q1407	DIODE	D616	D-5	D861	C-4
		Q314	D-2			D617	D-5	D862	C-2
		Q315	D-2			D618	D-4	D901	B-6
		Q316	E-4			D619	D-5	D903	B-4
		Q317	D-2	D121	E-6	D620	C-5	D1402	D-1
		Q318	D-4	D201	E-6	D621	C-4	D1404	E-1
		Q319	D-4	D202	E-6	D622	D-6	D1405	E-1
		Q501	B-5	D203	E-7	D623	C-5	D1406	D-1
		Q551	D-1	D301	E-4	D624	D-6	D1407	D-2
		Q552	D-2	D305	E-4	D625	D-5	D1408	D-1
		Q601	D-7	D310	D-3	D626	D-6	D1409	D-1
		Q602	D-6	D501	C-5	D627	D-6	D1410	E-1
		Q603	B-7	D510	C-1	D629	D-6	VARIABLE RESISTOR	
		Q604	C-7	D511	E-1	D630	D-6		
		Q605	D-7	D551	C-1	D631	D-6	RV301	D-2
		Q606	D-5	D561	C-4	D632	D-5	RV302	D-2
		Q607	C-4	D581	C-5	D635	C-5	RV502	D-1
		Q608	D-4	D602	D-6	D636	B-4	RV503	D-1
		Q609	C-4	D604	E-5	D637	B-4	RV551	C-1
		Q611	B-5	D607	B-7	D701	E-6	RV803	E-2
		Q612	C-5	D608	B-7	D804	C-4	CRYSTAL	
		Q613	C-4	D609	C-7	D851	B-1		
		Q801	A-4	D610	C-7	D852	B-2	X301	E-3
		Q802	A-2	D612	C-5	D853	A-1	X443	D-3
		Q803	D-3	D613	C-5	D855	B-1		
		Q804	D-2	D614	D-5	D857	B-3		
TRANSISTOR									
Q024	E-4								
Q101	C-4								
Q201	E-7								
Q202	E-6								
Q203	E-6								
Q301	D-2								
Q302	D-2								
Q303	D-2								
Q304	D-2								
Q305	E-5								
Q306	E-4								
Q307	E-4								
Q309	E-4								
Q310	D-3								



NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

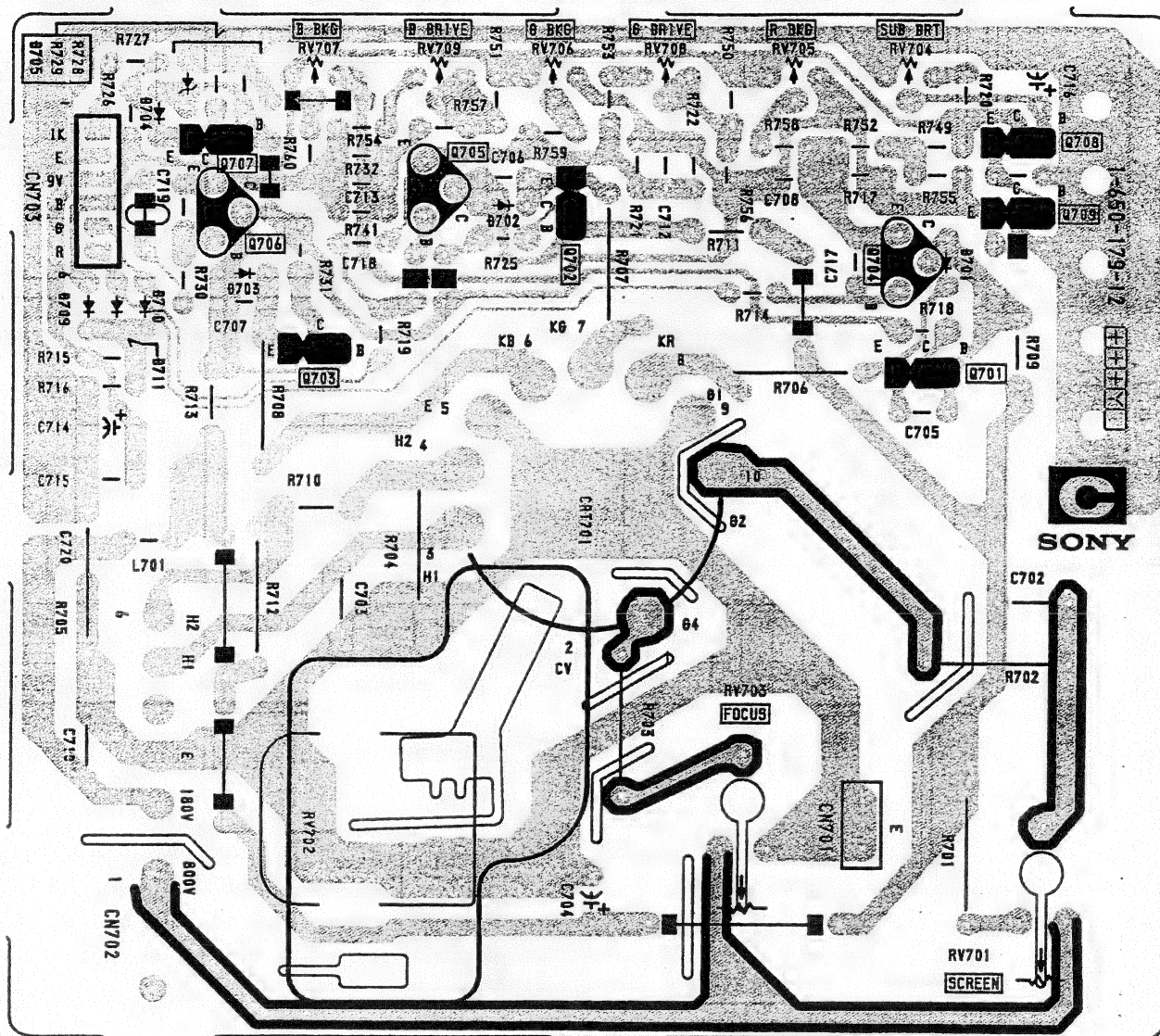
(3) Schematic Diagram of C Board



C

[R.G.B OUT]

— C Board —



NOTE:

The circuit indicated as left contains high voltage of over 600 Vp-p. Care must be paid to prevent an electric shock in inspection or repairing.

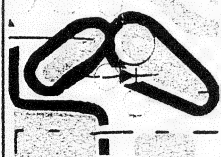


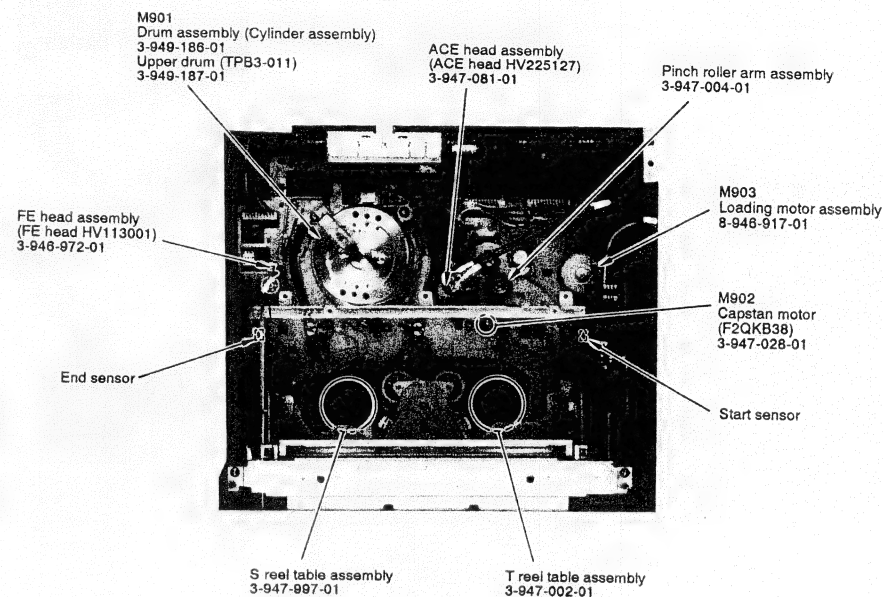
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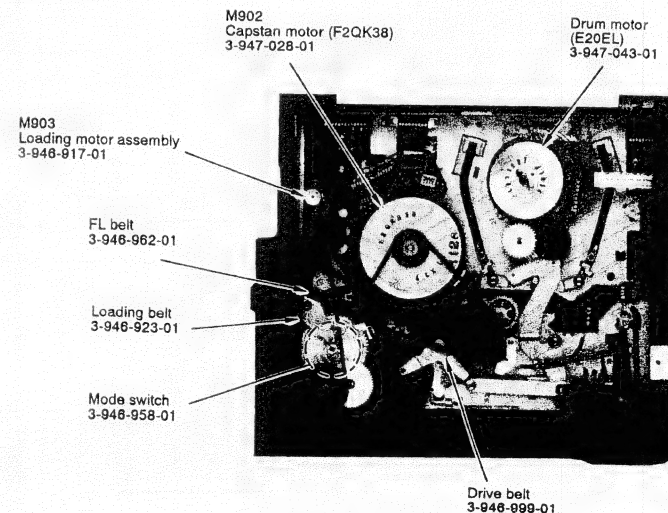
SECTION 1
GENERAL

1-1. INTERNAL VIEWS

— Top Side —

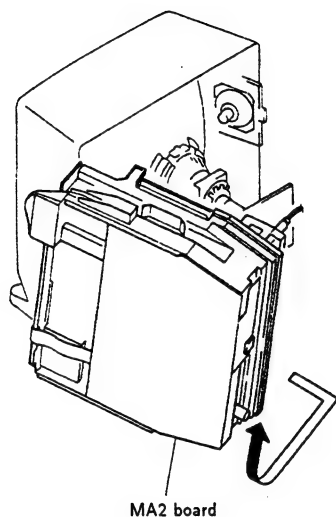


— Bottom Side —

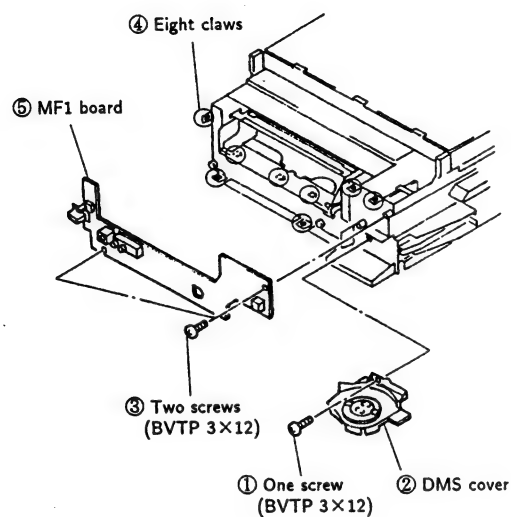


SECTION 2
DISASSEMBLY

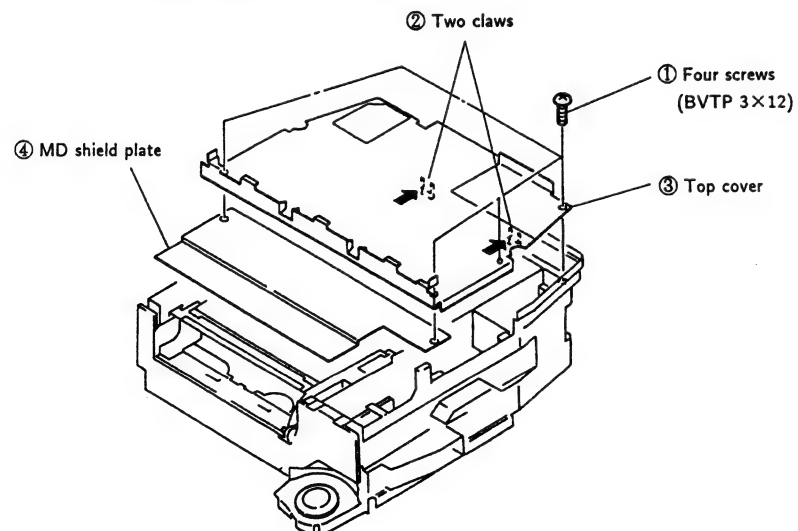
2-1. SERVICE POSITION



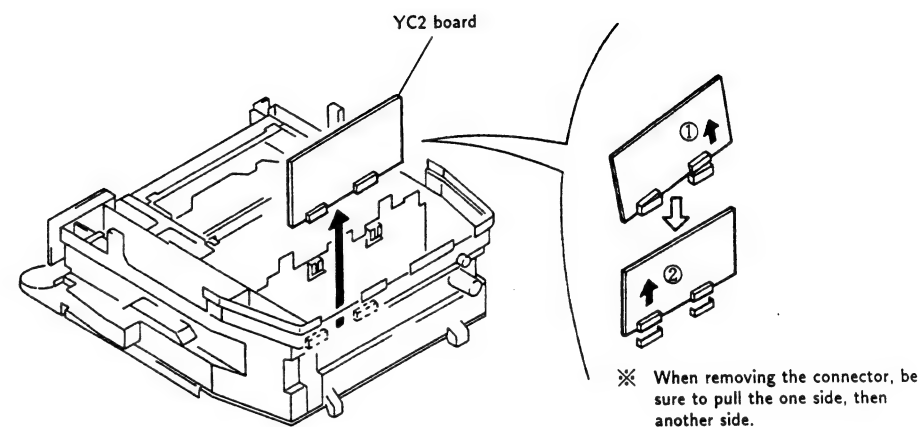
2-2. MF1 BOARD REMOVAL



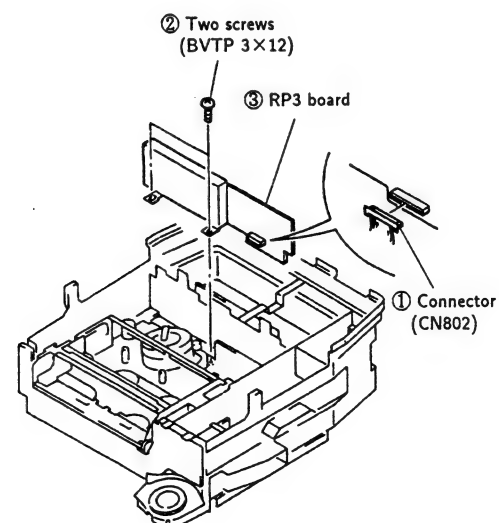
2-3. TOP COVER AND MD SHIELD PLATE REMOVAL



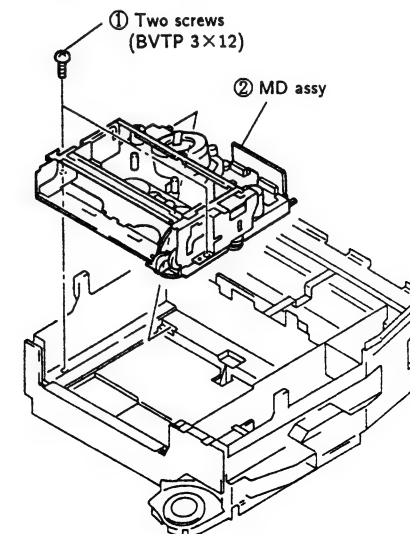
2-4. YC2 BOARD REMOVAL



2-5. RP3 BOARD REMOVAL



2-6. MD ASSY REMOVAL



SECTION 3 CIRCUIT ADJUSTMENTS

Necessary items and indications for total adjustment of electric circuit of this unit will be described in this chapter.

[Instruments to be Used]

- 1) Color TV
 - 2) Single or dual trace type oscilloscope, band more than 30 MHz, delay mode, as provided.
 - 3) Frequency counter (4 digits or more)
 - 4) PAL pattern generator
 - 5) Digital voltmeter
 - 6) Audio level meter
 - 7) Audio generator
 - 8) Attenuator
 - 9) Distortion meter
 - 10) Alignment tape
- Part code : H7099046H (MH-1)

[Connection]

Unless otherwise specified, connect and adjust the measurement equipment as follows.

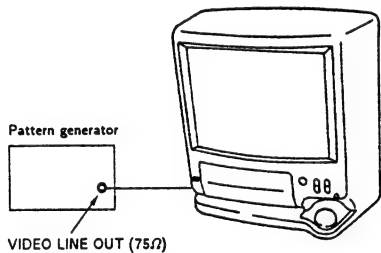


Fig. 3-1.

[Set-up for Adjustment]

The video signal from the pattern generator is used as adjustment signal for electrical adjustment. This video signal should meet the requirement. Connect the oscilloscope to the video input terminal on the MF 1 board and make sure that the amplitudes of sync signal of video signal, video portion and burst signal are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red signal" are 0.30 : 0.66, Fig. 7-2. shows video signals (color bars) used in adjusting the electrical adjustment.

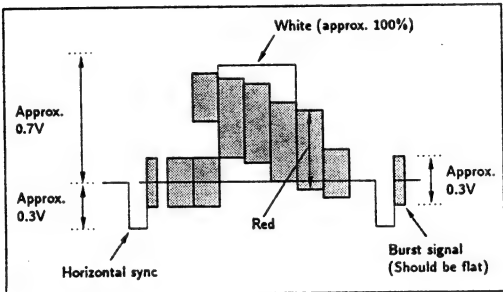


Fig. 3-2. Color bar signal of pattern generator

[Alignment Tape (MH-1)]

	Mode	Time	Video signal	Audio signal
1	SP	Ten minutes	Stair-step	7 kHz
2		Five minutes	—	3 kHz
3		Ten minutes	Color bar	1 kHz
4		Three minutes	RF sweep	

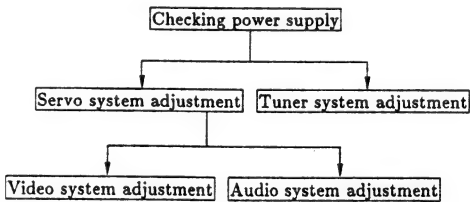
[Specified Input/Output Level Impedance]

Input/Output terminal

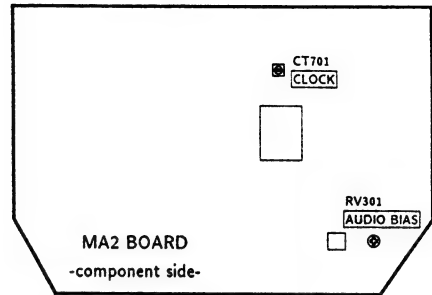
Video input	Pin jack Input signal : 1Vp-p, 75Ω, unbalanced Sync negative
VIDEO LINE OUT	Pin jack Output signal : 1Vp-p, 75Ω, unbalanced Sync negative
AUDIO LINE IN	Pin jack Input level : -7.5dBs (0dBs=0.775Vrms) Input impedance : More than 47kΩ
AUDIO LINE OUT	Pin jack Specified output : -7.5dBs At 47kΩ loaded. Load impedance : More than 10kΩ

[Adjustment Sequence]

Make the electrical adjustment in the following sequences.



3-1. M2 BOARD ADJUSTMENTS



1. CLOCK adjustment

Measurement Point	Pin ⑤ of IC701
Measurement Equipment	Frequency counter
Adjustment Element	CT701
Specified Value	244.1406μsec ± 0.0008μsec

- 1) Short circuit between pin ⑤ and GND of IC701.
- 2) Connect the frequency counter to pin ⑤ of IC701.
- 3) Adjust CT701 for 244.1406μsec ± 0.0008μsec.

2. Recording bias adjustment

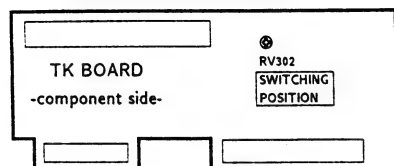
Mode	Recording and playback (SP mode)
Signal	400Hz, -30dBs 7kHz, -30dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Adjustment Element	RV301
Specified Value	0 ± 2dB

Note : Tape path adjustment should have been completed.

Adjustment Method :

- 1) Input signal of 400 Hz, -30dBs.
- 2) Make recording.
- 3) Set the AUDIO LINE IN signal to 7kHz, -30dBs and make recording.
- 4) Playback a recorded portion and measure output levels at 400Hz and 7kHz.
- 5) Confirm that the 7kHz playback signal level is within a range of 0±2dB against the 400Hz playback signal level. When beyond this range, adjust RV301 and repeat the steps (1) through (5).

3-2. TK BOARD ADJUSTMENT



SERVO SYSTEM ADJUSTMENT

1. Switching position adjustment (TK board)

Mode	Playback
Signal	Alignment tape, Stair step
Measurement Point	CH1: Pin ⑤ of CN402 (MA2) CH2: Pin ⑤ of CN401 (MA2)
Measurement Equipment	Oscilloscope
Adjustment Element	RV302
Specified Value	$416 \pm 32 \mu\text{sec}$ ($6.5 \pm 0.5\text{H}$)

Adjustment Method :

- 1) Press the tracking buttons ∇ and Δ at a time.
- 2) Adjust for $416 \pm 32 \mu\text{sec}$ (6.5 ± 0.5) using RV302.

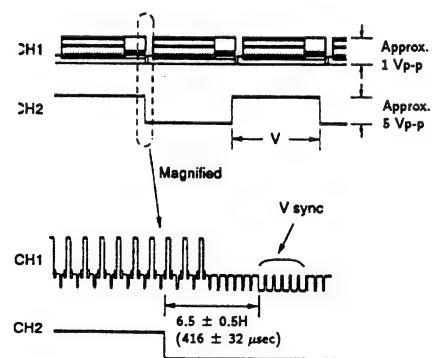
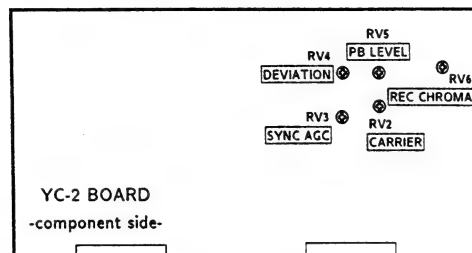


Fig. 3-3. Switching position adjustment

3-3. YC-2 BOARD ADJUSTMENTS



Adjust the video system in the following sequences as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode. Make sure that sync and color burst signals meet requirements specified at set up of adjustment shown in Fig 3-2.

[Adjustment Sequences]

- 1) Crystal oscillation frequency confirmation
- 2) Playback Y signal level adjustment
- 3) Sync AGC adjustment
- 4) Sync tip carrier set and deviation adjustment
- 5) Recording chroma signal level adjustment
- 6) Y signal recording level check
- 7) SECAM detector adjustment

1. Crystal oscillation frequency confirmation (YC-2 board)

Mode	Playback
Signal	Any tape
Measurement Point	Pin ② of IC001
Measurement Equipment	Frequency counter, Oscilloscope
Specified Value	$8.867238\text{MHz} \pm 120\text{Hz}$ (PAL)

Note : Connect the frequency counter through a buffer amplifier (oscilloscope, etc.) of high input impedance (1 M Ω or more) and low capacity (10 pF or less).

Confirmation Method :

- 1) Make sure that the frequency is $8.867238\text{MHz} \pm 120\text{Hz}$.
- 2) Make sure that the amplitude is $0.6 \pm 0.1\text{Vp-p}$.

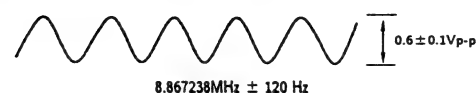


Fig. 3-4.

2. Playback Y signal level adjustment (YC-2 board)

Mode	Playback
Signal	Alignment tape, color bar
Measurement Point	VIDEO OUT
Measurement Equipment	Oscilloscope
Adjustment Element	RV005
Specified Value	$1.00 \pm 0.05\text{Vp-p}$

Note : Make this adjustment RENTAL PICTURE OFF condition.

Adjustment Method :

- 1) Adjust for $1.00 \pm 0.05\text{Vp-p}$ using RV005.

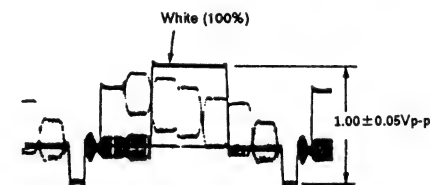


Fig. 3-5.

3. Sync AGC adjustment (YC-2 board)

Mode	Recording or EE
Signal	Color bar
Measurement Point	VIDEO OUT
Measurement Equipment	Oscilloscope
Adjustment Element	RV003
Specified Value	$1.00 \pm 0.05\text{Vp-p}$

Adjustment Method :

- 1) Adjust for $1.00 \pm 0.05\text{Vp-p}$ using RV003.

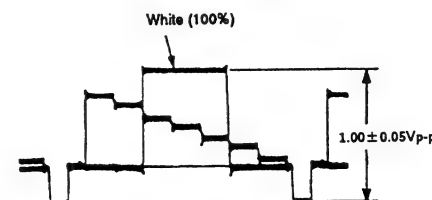


Fig. 3-6.

4. Sync tip carrier set and deviation adjustment (YC-2 board)

Before starting this adjustment, be sure to check that "2. playback Y signal level adjustment" has been completed.

Sync tip carrier set adjustment	
Mode	E-E
Signal	No signal
Measurement Point	Pin ⑩ of CN001 (REC Y)
Measurement Equipment	Frequency counter, Spectrum
Adjustment Element	RV002
Specified Value	$3.80 \pm 0.05\text{MHz}$
Deviation adjustment	
Mode	Recording and playback
Signal	Color bar
Measurement Point	VIDEO OUT
Measurement Equipment	Oscilloscope
Adjustment Element	RV004
Specified Value	$1.00 \pm 0.05\text{Vp-p}$

Note : Make this adjustment RENTAL PICTURE OFF condition

Adjustment Method :

- 1) Make no signal state and select the E-E mode.
- 2) Connect the frequency counter to the Pin ⑩ of CN 001 and adjust for $3.80 \pm 0.05\text{MHz}$ using RV002.
- 3) Input the color bar signal to make recording.
- 4) Playback the recorded tape portion and check the playback Y signal level of the VIDEO OUT.
Specification : Should be $1.00 \pm 0.05\text{Vp-p}$.
- 5) If does not meet the specification, repeat 1) to 4) after adjusting RV004.

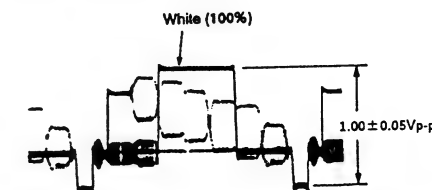


Fig. 3-7.

5. Recording chroma signal level adjustment (YC-2 board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ① of CN001 (REC C)
Measurement Equipment	Oscilloscope
Adjustment Element	RV006
Specified Value	110 ± 5 mVp-p

Adjustment Method :

- 1) Adjust the color bar "red" level to 110 ± 5 mVp-p using RV006.

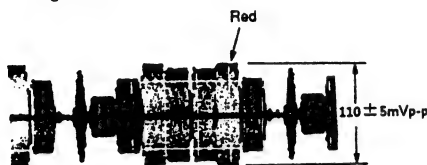


Fig. 3-8.

6. Y signal recording level adjustment (YC-2 board)

Mode	E-E
Signal	No signal
Measurement Point	Pin ⑩ of CN001 (Y REC)
Measurement Equipment	Oscilloscope
Specified Value	340 ± 40 mVp-p

Adjustment Method :

- 1) Confirm that the REC Y level is 340 ± 40 mVp-p.

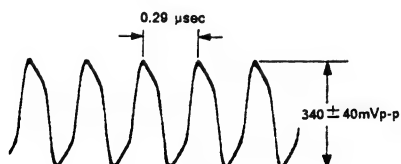


Fig. 3-9.

3-4. AUDIO SYSTEM ADJUSTMENTS

[Connection]

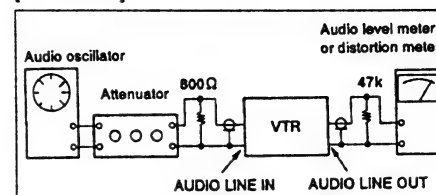


Fig. 3-10.

- Make adjustment in the SP mode.

[Adjustment Sequences]

- 1) ACE head adjustment
... See "VHS MECHANICAL ADJUSTMENT MANUAL III".
- 2) Playback output level check
- 3) E-E output level check
- 4) Recording bias adjustment
- 5) Overall level characteristic and distortion factor check.
- 6) Overall S/N check

1. ACE head adjustment

See "VHS MECHANICAL ADJUSTMENT MANUAL III".

2. Playback output level check

Mode	Playback
Signal	Alignment tape, 1 kHz (color bar) portion
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	-7.5 ± 2 dBs

Confirmation Method :

- 1) Playback 1kHz portion and make sure that AUDIO LINE OUT signal level is -7.5 ± 2 dBs.

3. E-E output level check

Mode	E-E
Signal	400Hz, -7.5 dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	-7.5 ± 3 dBs

Confirmation Method :

- 1) Input signal of 400 Hz, -7.5 dBs to AUDIO LINE IN.
- 2) Make sure that AUDIO LINE OUT signal level is -7.5 ± 3 dBs.

4. Overall level characteristic and distortion factor check

Mode	Recording and playback (SP mode)
Signal	400Hz, -7.5dBs
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter and distortion meter
Specified Value	Playback level : -7.5 ± 3 dBs Distortion factor : 4% or less

Confirmation Method :

- 1) Input audio signal of 400Hz, -7.5 dBs to AUDIO LINE IN.
- 2) Make recording.
- 3) Playback the recorded portion.
- 4) Make sure that playback level is -7.5 ± 3 dBs.
- 5) Make sure that distortion factor is within 4%.

5. Over S/N check

Mode	Recording and playback (SP mode)
Signal	No signal
Measurement Point	AUDIO LINE OUT terminal
Measurement Equipment	Audio level meter
Specified Value	Less than -42 dBs

Confirmation Method :

- 1) Make no signal input.
- 2) Make recording.
- 3) Playback the recorded portion.
- 4) Confirm that the noise level is less than -42 dBs.

SECTION 4

SYSTEM CONTROL INTERFACE

4-1. SERVO/SYSTEM CONTROL-MICROPROCESSOR TERMINAL FUNCTION (MA2 BOARD IC501)

Pin. No.	Port	I/O	Name	Function
1	PB5/PPO13	O	RF SWP	Video switching pulse output.
2	PB4/PPO12	O	Q VD	Quasi VD pulse output.
3	PB3/PPO11	O	Q HD ENABLE	Quasi HD control.
4	PB2	O	AF REC	Not used.
5	PB1	O	REC P	"H" output when video REC (REC control).
6	PB0	O	REC	"H" output when REC.
7	PC7	O	REC CTL	REC CTL output.
8	PC6	O	INT VD	Not used.
9	PC5	O	PB	"H" when normal audio playback.
10	PC4	O	SP	"L" when SP mode.
11	PC3	O	LP	"H" when LP mode.
12	PC2	O	Env GAIN	"H" when LP mode.
13	PC1	O	JOG	"L" when special playback.
14	PC0	O	STEP PLS	STEP PLS Out put.
15	PJ7	O	SYSTEM 2	Not used.
16	PJ6	O	H DET	
17	PJ5	O	NTSC PB	"H" when NTSC playback.
18	PJ4	O	Edit	"H" when Edit.
19	PJ3	O	S Reel FG	S Reel sensor input. TSC, "L" when special playback on PAL-M.
20	PJ2	O	T Reel FG	T Reel sensor input.
21	PJ1	O	RENTAL	"H" when RENTAL PICTURE.
22	PJ0	O	AMS	Not used.
23	PD7	I	C-OUT	Cassette switch input.
24	PD6	I	C-START	
25	PD5	I	C-IN	
26	PD4	I	REC SAF	Erasing protection tab detection.
27	PD3	O	E TAPE	"H" when E TAPE mode.
28	PD2	O	TV/VTR	Not used.
29	PD1	O	LINE SEL 1	Not used.
30	PD0	O	LINE SEL 2	Not used.
31	PH7	O	TA MUTE	Not used.
32	PH6	O	PAL	
33	PH5	O	AMS Mute	
34	PH4	O	ORCON	
35	PH3	O	CAP TRQ 1	Current drive capstan motor control.
36	PH2	O	CAP TRQ 2	
37	PH1	O	LAMP	End sensor lamp drive output.
38	PH0	O	CAP STOP	Capstan STOP signal output.
39	MP	I	MP	Fixed "L" level.
40	RST	I	COSMO RST	System reset input.
41	Vss		Vss	GND
42	XTAL	O	XTAL	System clock 12 MHz.
43	EXTAL	I	EXTAL	
44	CS0	O	COSMO CS	Chip select signal.
45	SIO	I	S IN	Signal for serial communication.

Pin. No.	Port	I/O	Name	Function
46	SO0	O	S OUT 0	Signal for serial communication.
47	SCK0	O	SCK 0	Clock for serial communication.
48	PF7/AN11	I	K Mode	Not used.
49	PF6/AN10	O	AFT UP	Not used.
50	PF5/AN9	I	DEST	Destination selection.
51	PF4/AN8	I	AF SW POSI	Not used.
52	AVss		AVss	UNSW GND.
53	AVREF		AVREF	AD port reference input. UNSW 5V.
54	AVDD		AVDD	UNSW 5V.
55	PF3/AF7	I	MODE4	Mechanism section CAM encoder input.
56	PF2/AN6	I	MODE3	
57	PF1/AN5	I	MODE2	
58	PF0/AN4	I	MODE1	
59	AN3	I	DEW	DEW sensor analog input.
60	AN2	I	VIDEO RF	Video RF envelope input.
61	AN1	I	AF ENV	Not used.
62	AN0	I	SW POSI	VR input for RF SWP adjustment.
63	PG7	I	T SENSOR	Take-up side end sensor input.
64	PG6	I	S SENSOR	Supply side end sensor input.
65	PG5	I	N.C.	Not used.
66	PG4/SYNC	I	V SYNC	Composite sync input.
67	PG3/PBCTL	I	PB CTL	Playback CTL input
68	PG2/DPG	I	DRM PG	Drum PG input.
69	PG1/DFG	I	DRM FG	Drum FG input.
70	PG0/CFG	I	CAP FG	Capstan FG input.
71	PE7	O	STEP PULS	"L" when capstan STEP is driven.
72	PE6	O	CAP RVS	Capstan reverse signal output.
73	PE5	O	CAP DA	Capstan error D/A output.
74	PE4	O	DRUM DA	Drum error D/A output.
75	PE3	O	MEM CS	EEPROM chip select.
76	PE2	O	STEP DRIVE	CTL amp step action control.
77	PE1	I	VD CTL	Playback CTL input.
78	PE0		N.C.	Not used.
79	SI1	I	AFT Dwn	
80	SO1	O	S OUT 1	
81	SCK1		SCK 1	
82	PI4	O	AFT UP	Not used.
83	PI3	O	HIFI	Not used.
84	PI2/PWM	O	STEREO	Not used.
85	PI1/RMC	O	HEAD CONT	Head amp IC control.
86	TEX	I	N.C.	Not used.
87	TX		N.C.	Not used.
88	Vss		Vss	GND
89	VDD		VDD	UNSW 5V.
90	N.C.		N.C.	Not used.

Pin. No.	Port	I/O	Name	Function
91	PA7	O	LOAD (-)	Loading motor control.
92	PA6	O	LOAD (+)	
93	PA5	O	A PB/REC	Normal audio bias oscillation ON/OFF.
94	PA4	O	A PB	"H" when audio playback.
95	PA3	O	A MUTE	Audio muting output. "H": muting.
96	PA2	O	V-PB	"L" when video playback.
97	PA1	O	OSD Black	Not used.
98	PA0	O	CTL INDEX	Not used.
99	PB7	O	AF PB	Not used.
100	PB6/PPO14	I	AF SWP	Not used.

4-2. SYSTEM CONTROL-VIDEO BLOCK INTERFACE (MA2 BOARD IC501)

Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UN- LOAD- ING	PB	PB- PAUSE	SLOW	x 2	CUE	REVIEW	REC	REC- PAUSE
V-PB	MA2 Board IC501 ⑤	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	MA2 Board IC501 ⑥	O	L	L	L	L	H	*1	H	L	L	H	L
RF SW P.	MA2 Board IC501 ①	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD	MA2 Board IC501 ②	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
SP	MA2 Board IC501 ⑩	O	*5	*5	*5	*6	*6	*6	*6	*6	*6	*5	*5
LP	MA2 Board IC501 ⑪	O	*5	*5	*5	*6	*6	*6	*6	*6	*6	*5	*5
REC. P	MA2 Board IC501 ⑤	O	L	L	L	L	L	L	L	L	L	L	H
REC	MA2 Board IC501 ⑥	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	MA2 Board IC501 ⑧	I	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7

*1. "H" when tape stops. "L" when tape runs (approx. for 40 msec).

*2. Synchronized with drum rotation. 30 Hz 50% duty pulse.

*3. Normally "L". "H" when video signal is not generated.

*4. V period "H" pulse.

*5. Selected by SP/EP. SP mode: "L", EP mode: "H".

*6. Selected by tape recording mode.

sig/mod	SP	LP
SP (10)	L	H
LP (11)	L	H

*7. Composite sync signal (positive).

*8. "H" when menu screen or blue back screen.

4-3. SYSTEM CONTROL-SERVO PERIPHERAL CIRCUIT INTERFACE (MA2 BOARD IC501)

Signal	Pin. No.	I/O	STOP	FF	REW	TAPE THREAD- ING	TAPE UN- THREAD- ING	PB	PB- PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC- PAUSE
REC CTL	MA2 Board IC501 ⑦	O	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*14	*1	*14
STEP PLS	MA2 Board IC501 ⑩	O	L	*2	*2	*2	*2	*2	L	*3	*2	*2	*2	*2	L
SW POSITION *4	MA2 Board IC501 ⑫	I													
PB CTL	MA2 Board IC501 ⑪	I	H	*5	*5			*1	H/L	*3	*5	*5	*5	*1	H
VD CTL	MA2 Board IC501 ⑬	I	H	*5	*5			*1	H/L	*3	*5	*5	*5	*1	H
DRUM PG	MA2 Board IC501 ⑭	I	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
DRUM FG	MA2 Board IC501 ⑮	I	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7	*7
CAP FG	MA2 Board IC501 ⑯	I	H/L	*8	*8	*9	*9	*8	H/L	*10	*8	*8	*8	*8	H/L
CAP RVS	MA2 Board IC501 ⑰	O	H/L	L	H	L	H	L	L	*3	L	L	H	L	L
CAP DA *14	MA2 Board IC501 ⑱	O	*11	*11	*11	*11	*11	*12	*11	*11	*12	*12	*12	*12	*11
DRUM DA *14	MA2 Board IC501 ⑲	O	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13	*13
STEP DRIVE	MA2 Board IC501 ⑳	O	L	L	L	L	L	L	L	*15	L	L	L	L	L

- *1. 30 Hz pulse.
- *2. 3 value output of "H", "L" and Hi-Z (2.5V).
- *3. Unstable period Pulse.
- *4. Input terminal for video switching position adjustment.
- *5. Pulse of period in proportion to tape speed.
- *6. 30 Hz "H" pulse.
- *7. 720 Hz pulse.

- *8. Pulse of period in proportion to tape speed.
- *9. Unstable period pulse.
- *10. Pulse at tape running.
- *11. Approx. 2 msec period "H" or "L" pulse.
- *12. Approx. 1.5 msec period "H" or "L" pulse.
- *13. Approx. 3 msec period "H" or "L" pulse.
- *14. Hi-Z (2.5V).
- *15. "H" when FWD direction and STEP drive.

4-4. SYSTEM CONTROL-MECHANISM BLOCK INTERFACE (MA2 BOARD IC501)

Signal	Pin. No.	I/O	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD- ING	TAPE THREAD- ING	TAPE UN- THREAD- ING	STOP	FF	REW	PB	PB- PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC- PAUSE
LOAD (-)	MA2 Board IC501 ⑤	O	L	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L
LOAD (+)	MA2 Board IC501 ⑥	O	L	L	L	H	L	L	L	L	L	L	L	L	L	L	L	L
MODE 1	MA2 Board IC501 ⑦	I	L	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H
MODE 2	MA2 Board IC501 ⑧	I	L	H	L	L	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	MA2 Board IC501 ⑨	I	H	H	H	L	H	H	H	H	L	L	L	L	L	L	L	L
MODE 4	MA2 Board IC501 ⑩	I	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
C-OUT	MA2 Board IC501 ⑪	I	L	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
C-START	MA2 Board IC501 ⑫	I	H	L	L	H	H	H	H	H	H	H	H	H	H	H	H	H
C-IN	MA2 Board IC501 ⑬	I	H	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
REC SAF	MA2 Board IC501 ⑭	I	L	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
T REEL	MA2 Board IC501 ⑮	I	H/L	H/L	H/L	H/L	H/L	H/L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
S REEL	MA2 Board IC501 ⑯	I	H/L	H/L	H/L	*2	*2	H/L	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
LAMP	MA2 Board IC501 ⑰	O	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3	*3
CAP TRQ1	MA2 Board IC501 ⑱	O	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H	H
CAP TRQ2	MA2 Board IC501 ⑲	O	H	H	H	H	H	H	H	H	H	H	*4	H	H	H	H	H
CAP STOP	MA2 Board IC501 ⑳	O	L	*5	*5	*5	*5	L	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
T SENS	MA2 Board IC501 ㉑	I	*3	*3	*3	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
S SENS	MA2 Board IC501 ㉒	I	*3	*3	*3	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6

*1. "L" when erasing protection tab is bent. "H" when not bent.

*2. Pulse of period in proportion to reel rotating speed.

*3. Approx. 2 msec period "H" pulse.

*4. Pulse.

*5. 3 value output of "H", "L" and "HIZ (2.5V)".

*6. Normally "L". 2 msec period "H" pulse when tape top or tape end is detected.

4-5. SYSTEM CONTROL—SYSTEM CONTROL PERIPHERAL CIRCUIT INTERFACE (MA2 BOARD IC501)

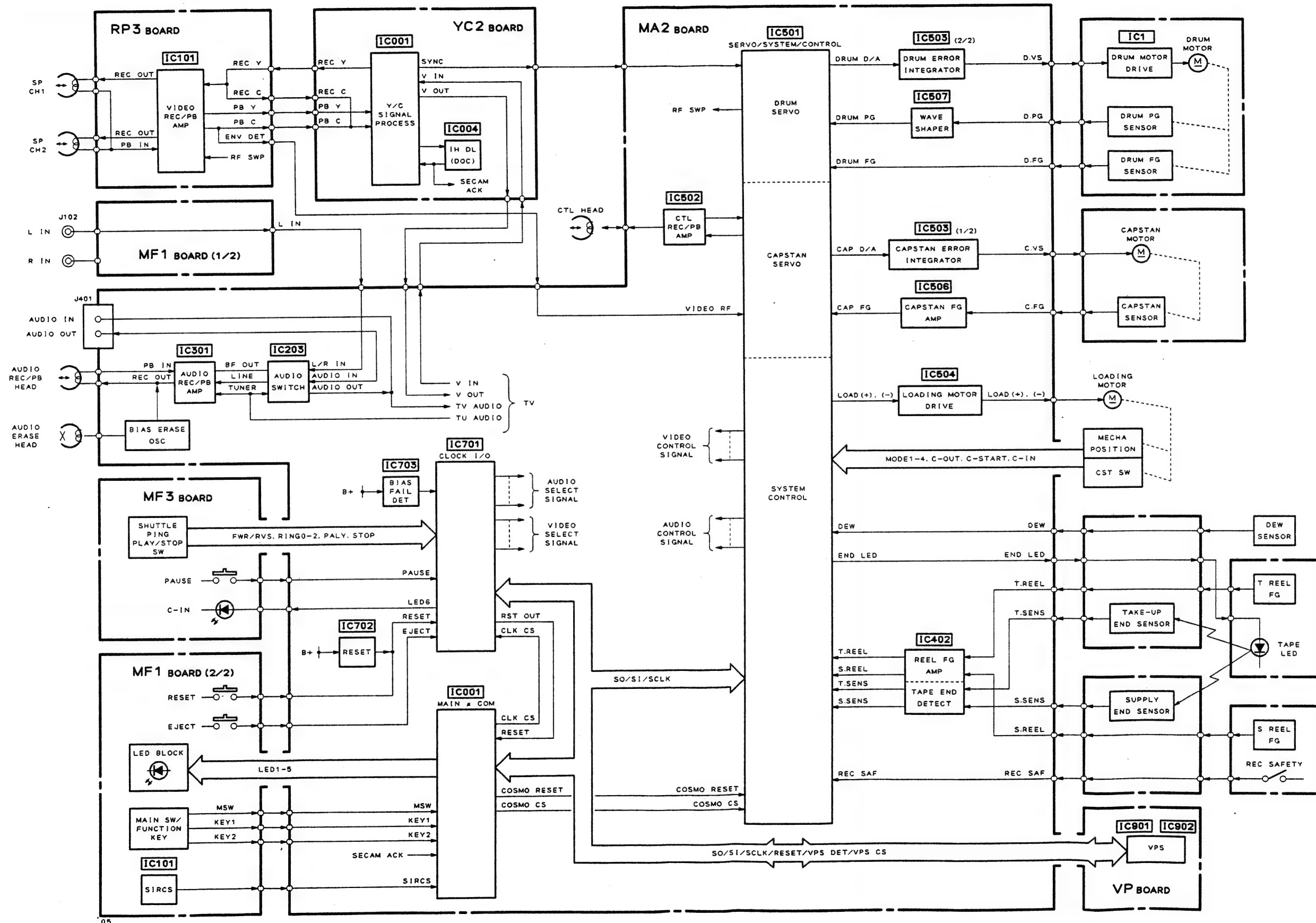
Signal	Pin. No.	I/O	I/O level
COSMO-RESET	MA2 Board IC501 ④	I	Normally "H". "L" when service interruption is detected or restored.
COSMO-CS	MA2 Board IC501 ⑤	I	Chip select signal from timer microprocessor. V period "L" pulse.
SI-BUS	MA2 Board IC501 ⑥	I	Serial communication data to timer microprocessor. V period "L" pulse.
SO-BUS	MA2 Board IC501 ⑦	O	Serial communication data to timer microprocessor. V period "L" pulse.
S CLK	MA2 Board IC501 ⑧	I	Serial communication clock with timer microprocessor. V period "L" pulse.

4-6. SYSTEM CONTROL—AUDIO BLOCK INTERFACE (MA2 BOARD IC501)

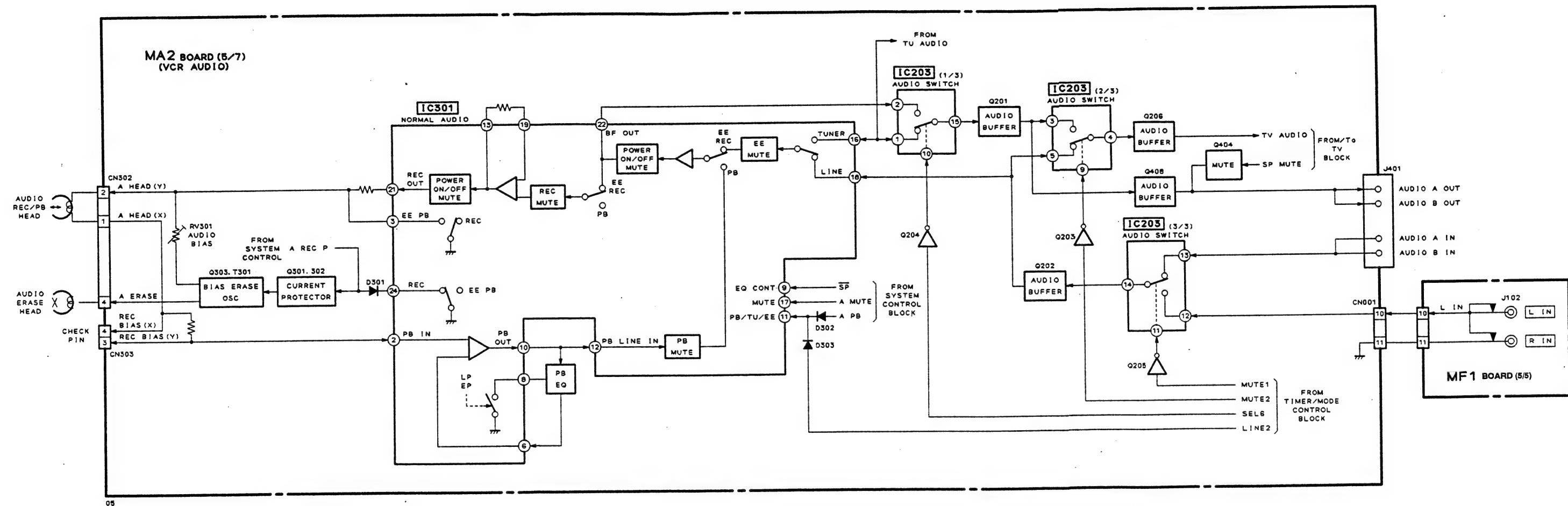
Signal	Pin. No.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UN- LOAD- ING	PB	PB- PAUSE	SLOW	× 2	CUE	REVIEW	REC	REC- PAUSE
A PB	MA2 Board IC501 ⑨	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	MA2 Board IC501 ⑩	O	L	L	L	L	H	H	H	H	H	L	L
A PB/REC	MA2 Board IC501 ⑪	O	L	L	L	L	L	L	L	L	L	H	L
SP	MA2 Board IC501 ⑫	O	*1	*1	*1	*2	*2	*2	*2	*2	*2	*1	*1

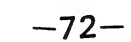
*1. Selected by SP/EP selector. SP mode: "L", EP mode: "H".

*2. Selected by tape recording mode. SP mode: "L", EP mode: "H".

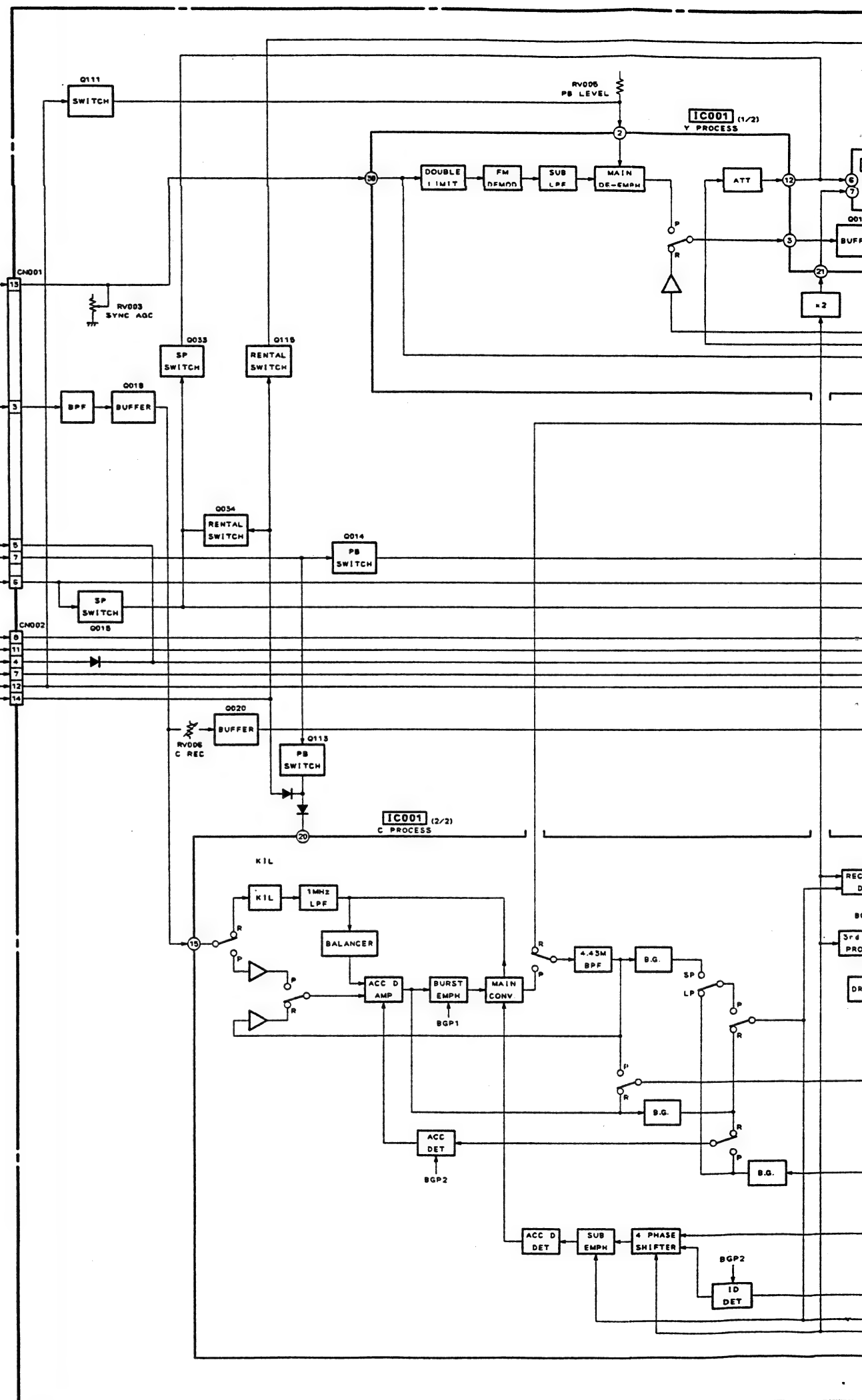
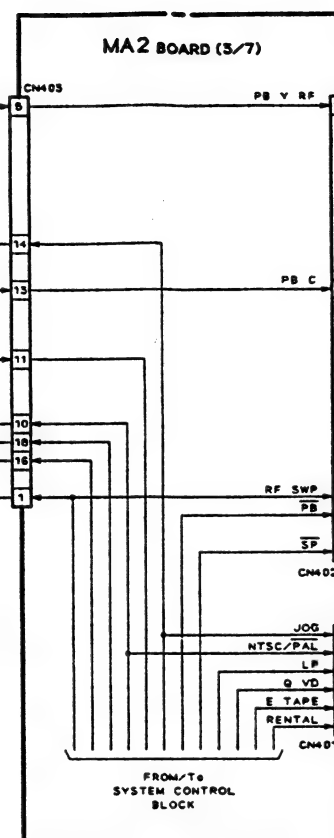
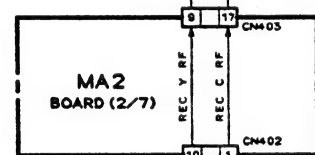
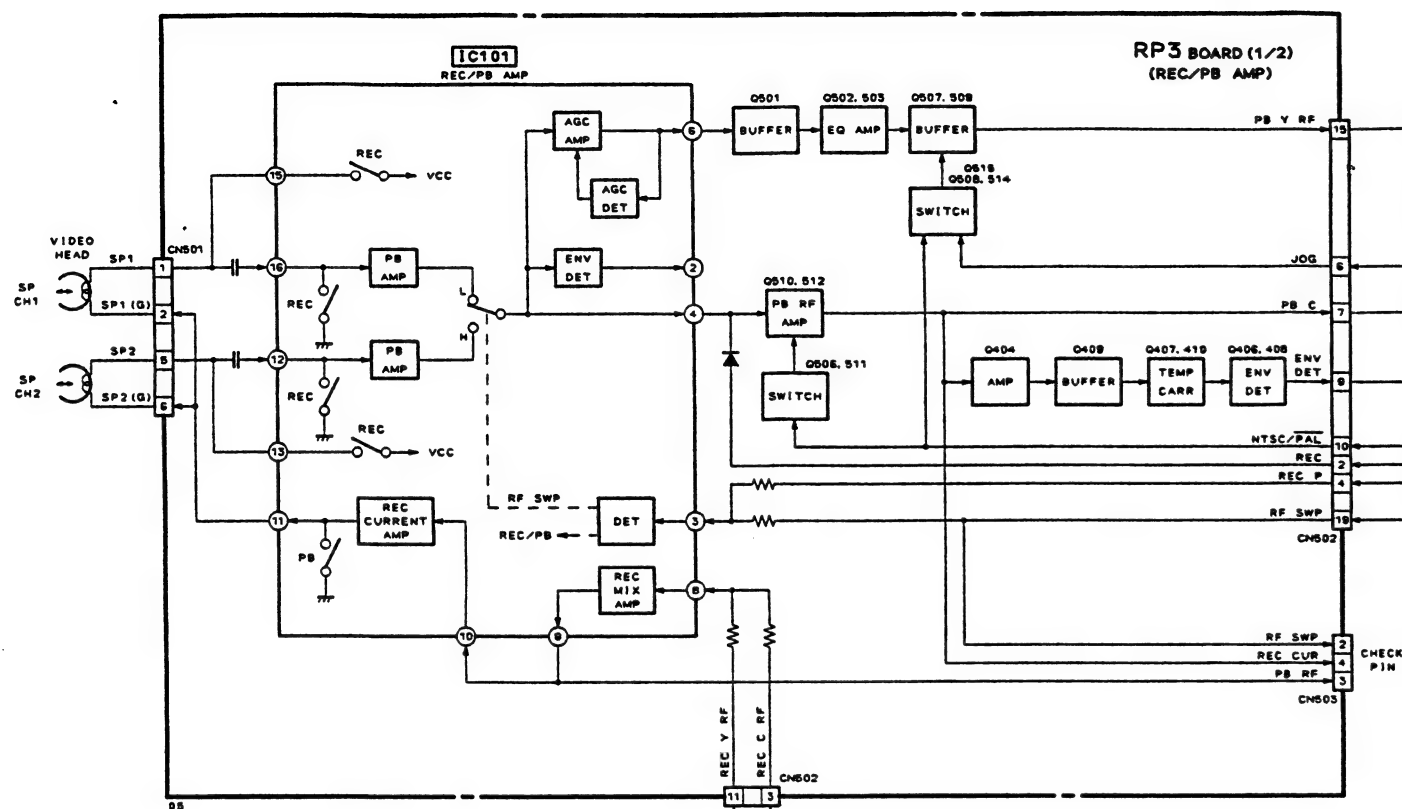
SECTION 5
DIAGRAMS5-1. BLOCK DIAGRAMS (VIDEO SECTION)
(1) VCR Overall Block Diagram

(3) Audio Block Diagram



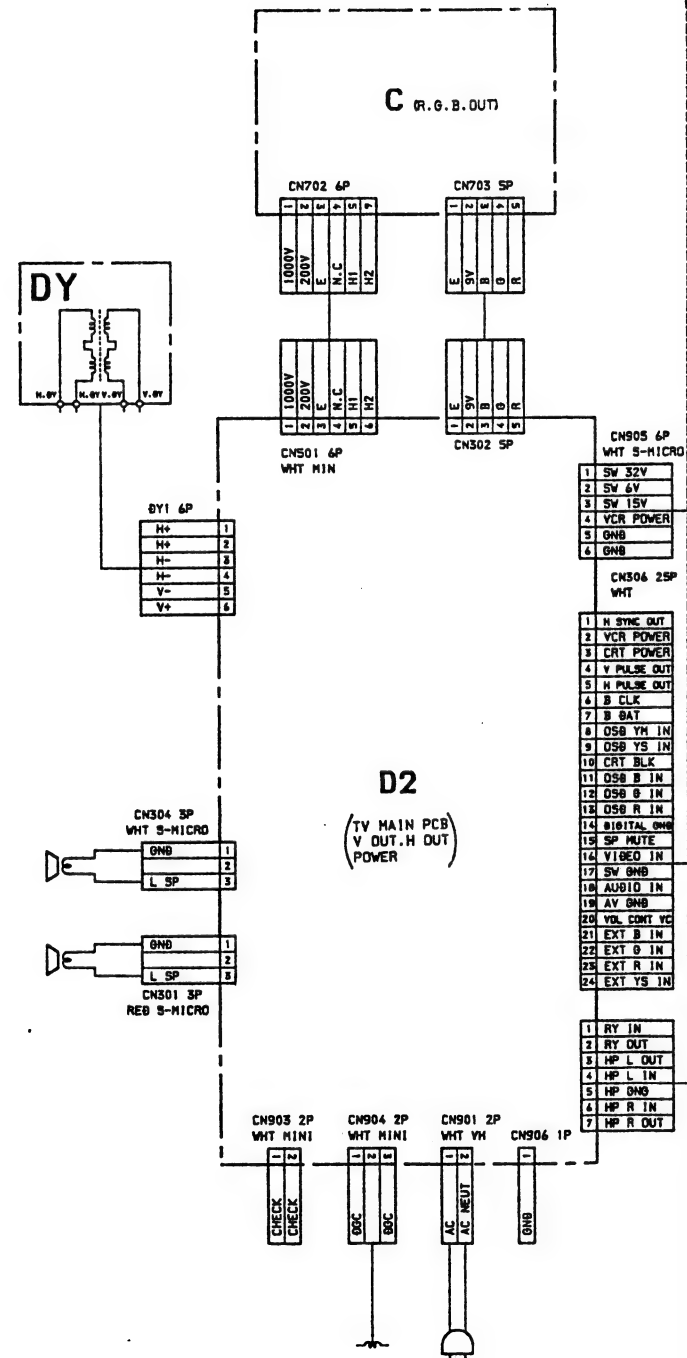


(5) Video Block Diagram

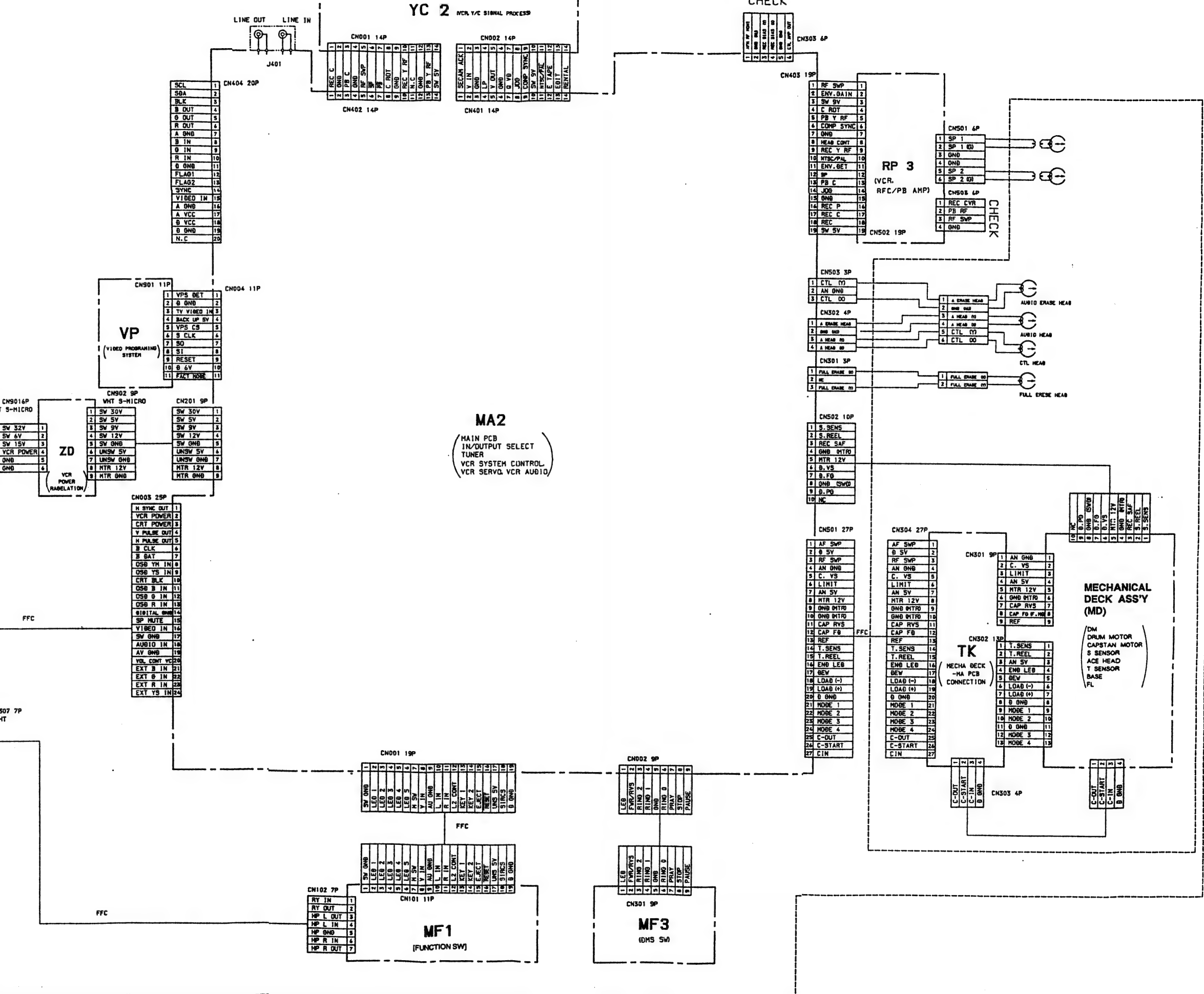


5-2. FRAME SCHEMATIC DIAGRAM

TV BLOCK

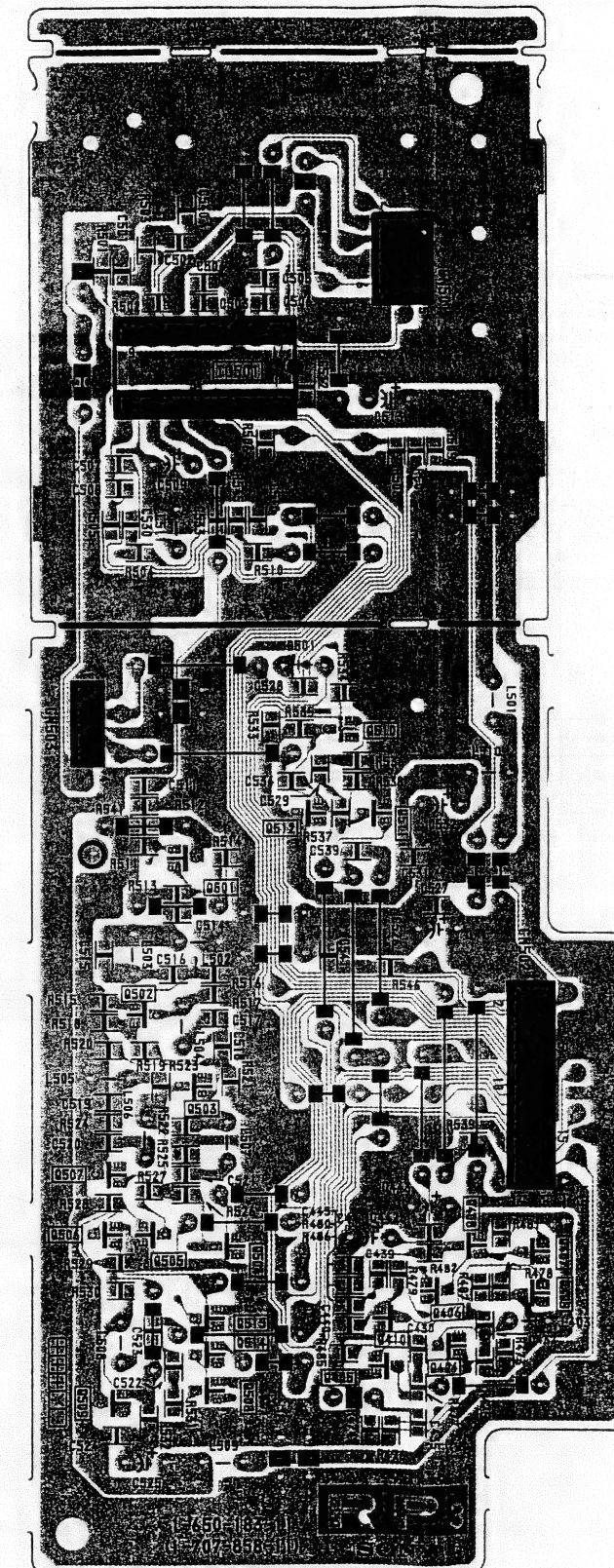


VTR BLOCK

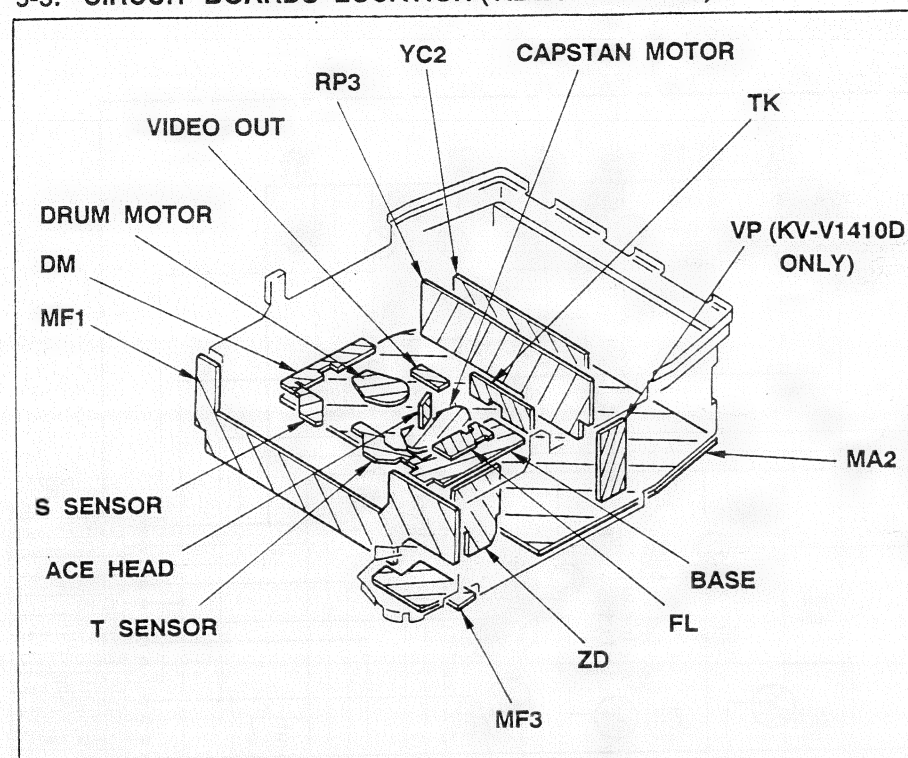


RP3 [VCR, REC/PB AMP]

- RP3 Board -



5-3. CIRCUIT BOARDS LOCATION (VIDEO SECTION)



5-4. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS (VIDEO SECTION)

Note:

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms. $\text{k}\Omega = 1000\Omega$, $\text{M}\Omega = 1000\text{k}\Omega$
- Indication of resistance, which does not have one for rating electrical power, is as follows.

Pitch: 5 mm

Rating electrical power $\frac{1}{4}$ W (CHIP: 1/10W)

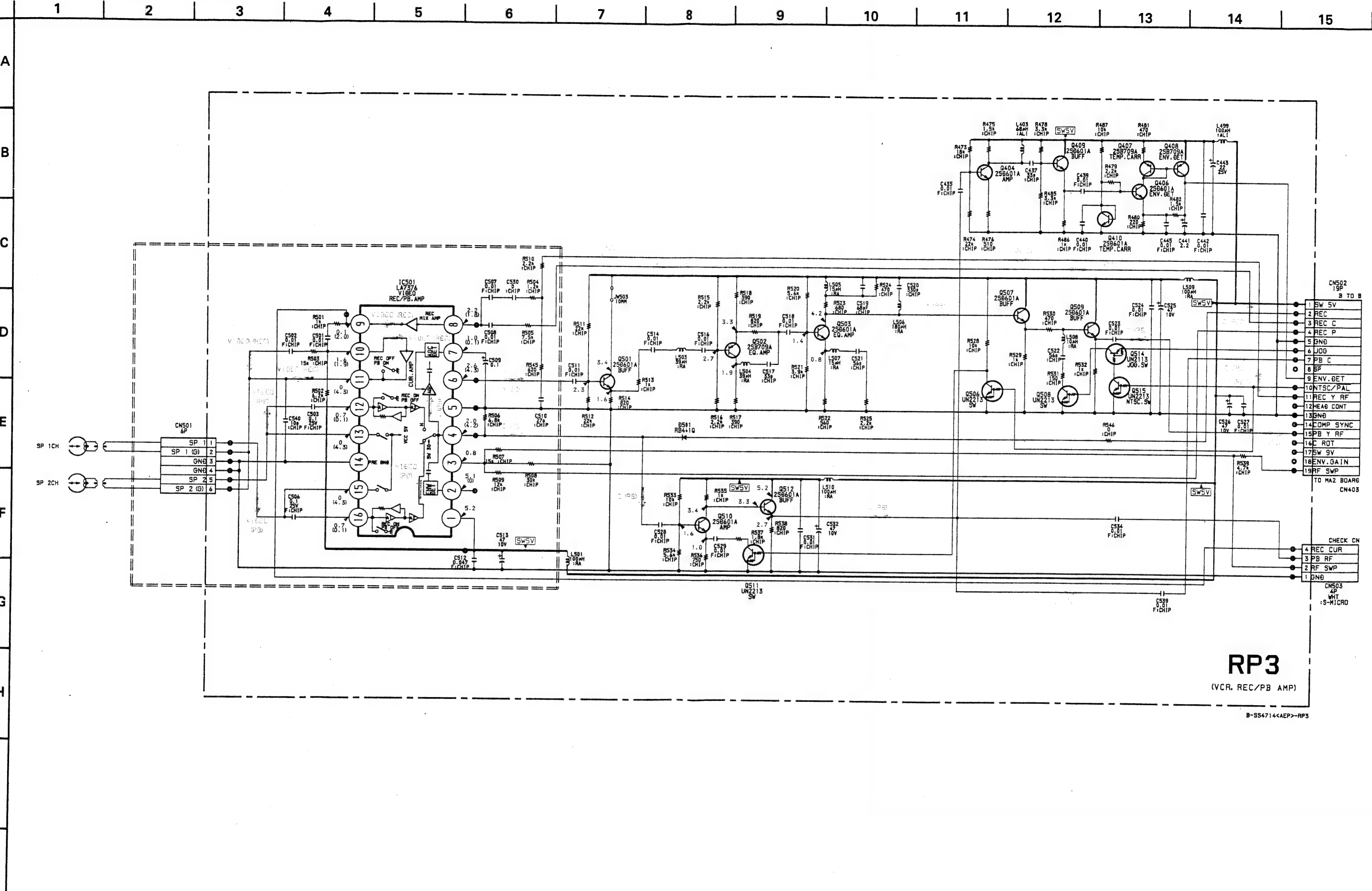
- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- Readings are taken with a $10\text{M}\Omega$ digital multimeter.
- Voltage are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- * : Can not be measured.
- Circled numbers are waveform references.
- : B+ bus.
- : B- bus.
- no mark: REC/PB mode (SP)
- () : REC mode (SP)
- < > : PB mode (SP)
- [] : RF
- : signal path.

Note: The components identified by shading and mark are critical for safety. Replace only with part number specified.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
COIL	: *	ADJUSTMENT RESISTOR
	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

(1) Schematic Diagram of RP3 Board



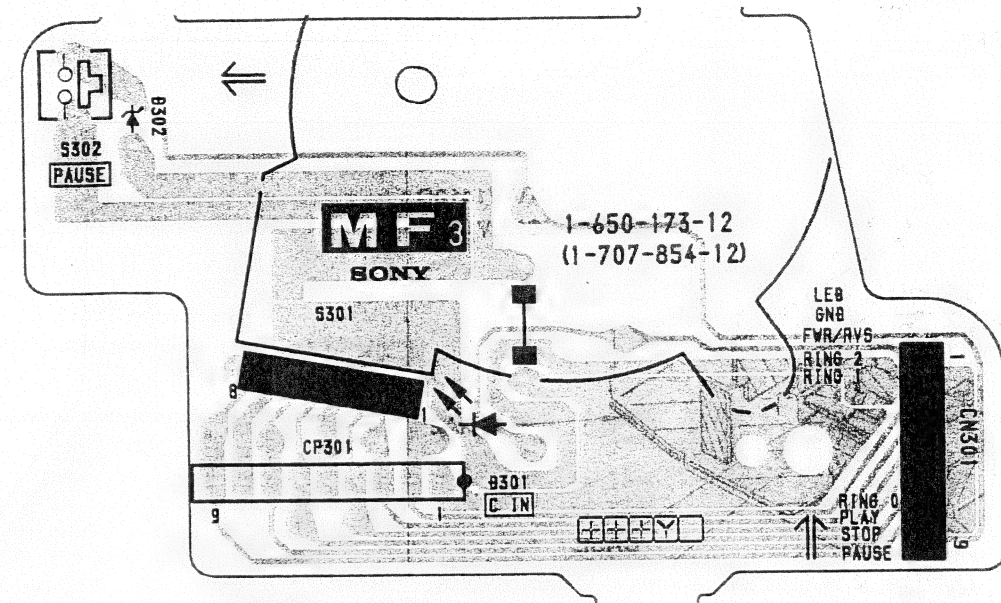
[FUNCTION SW]

[VIDEO PROGRAMING SYSTEM]

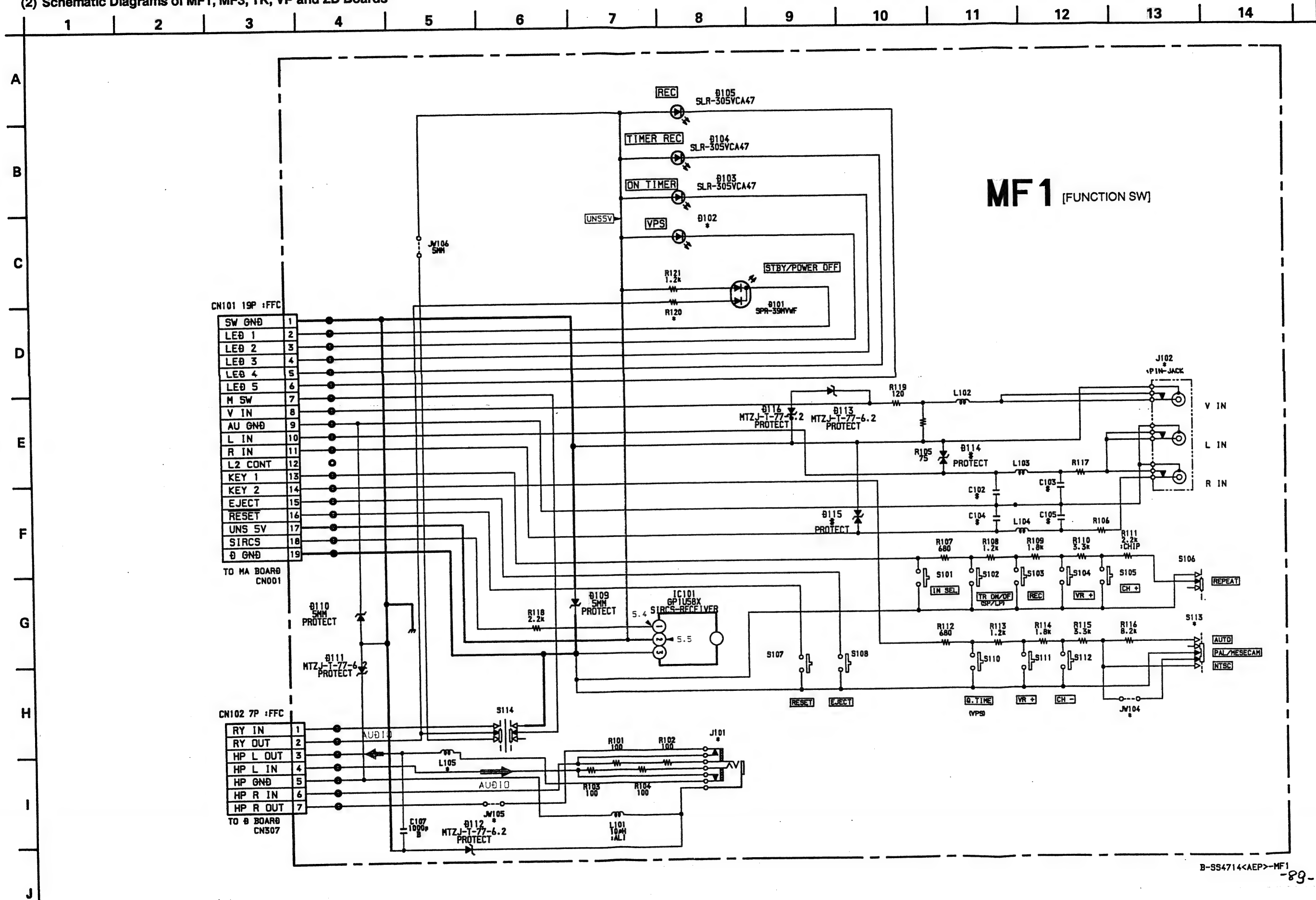
MECHA DECK
- MA PCB
CONNECTION

[DMS SW]

[VCR, POWER REGULATION]

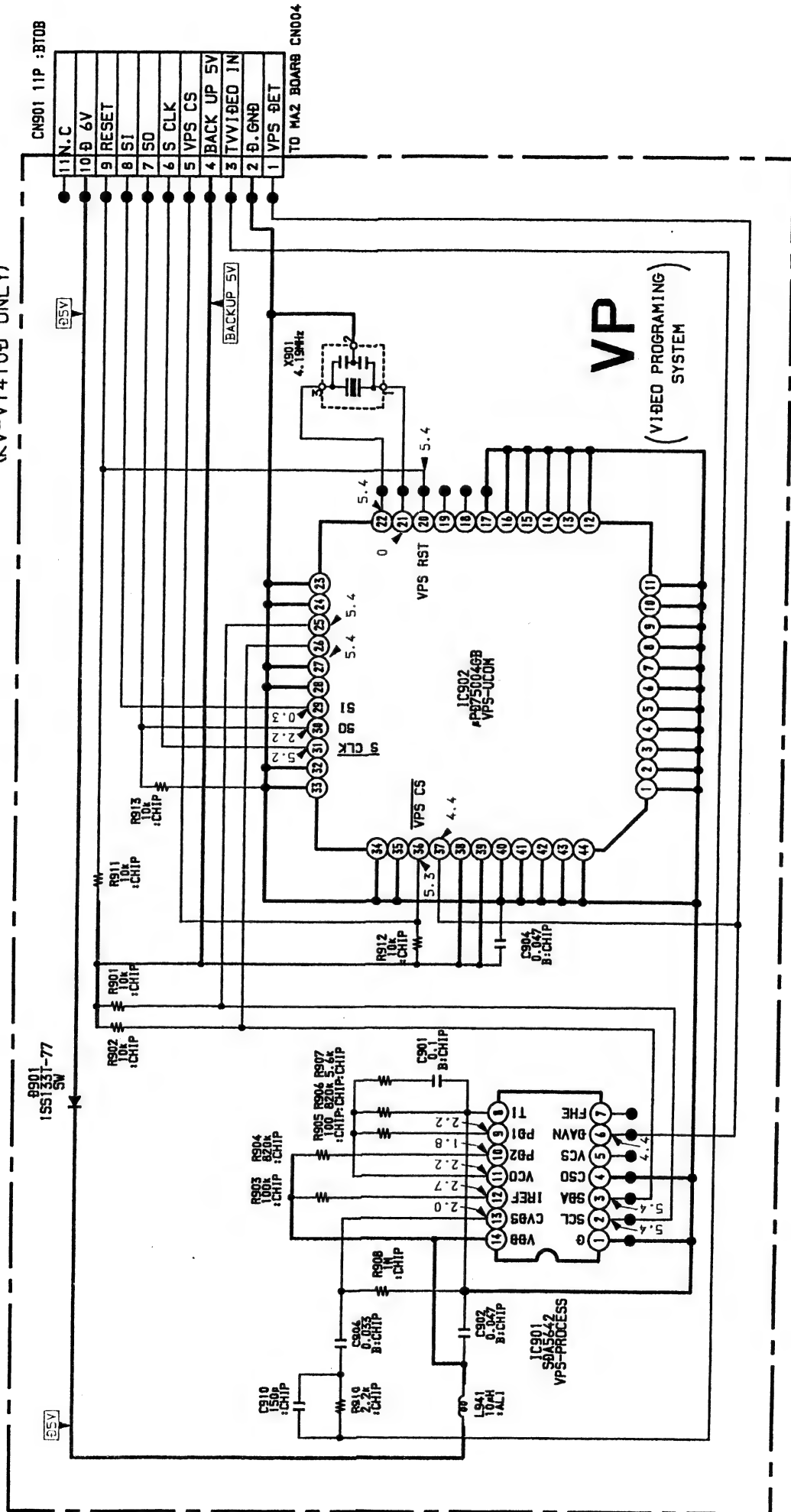


(2) Schematic Diagrams of MF1, MF3, TK, VP and ZD Boards



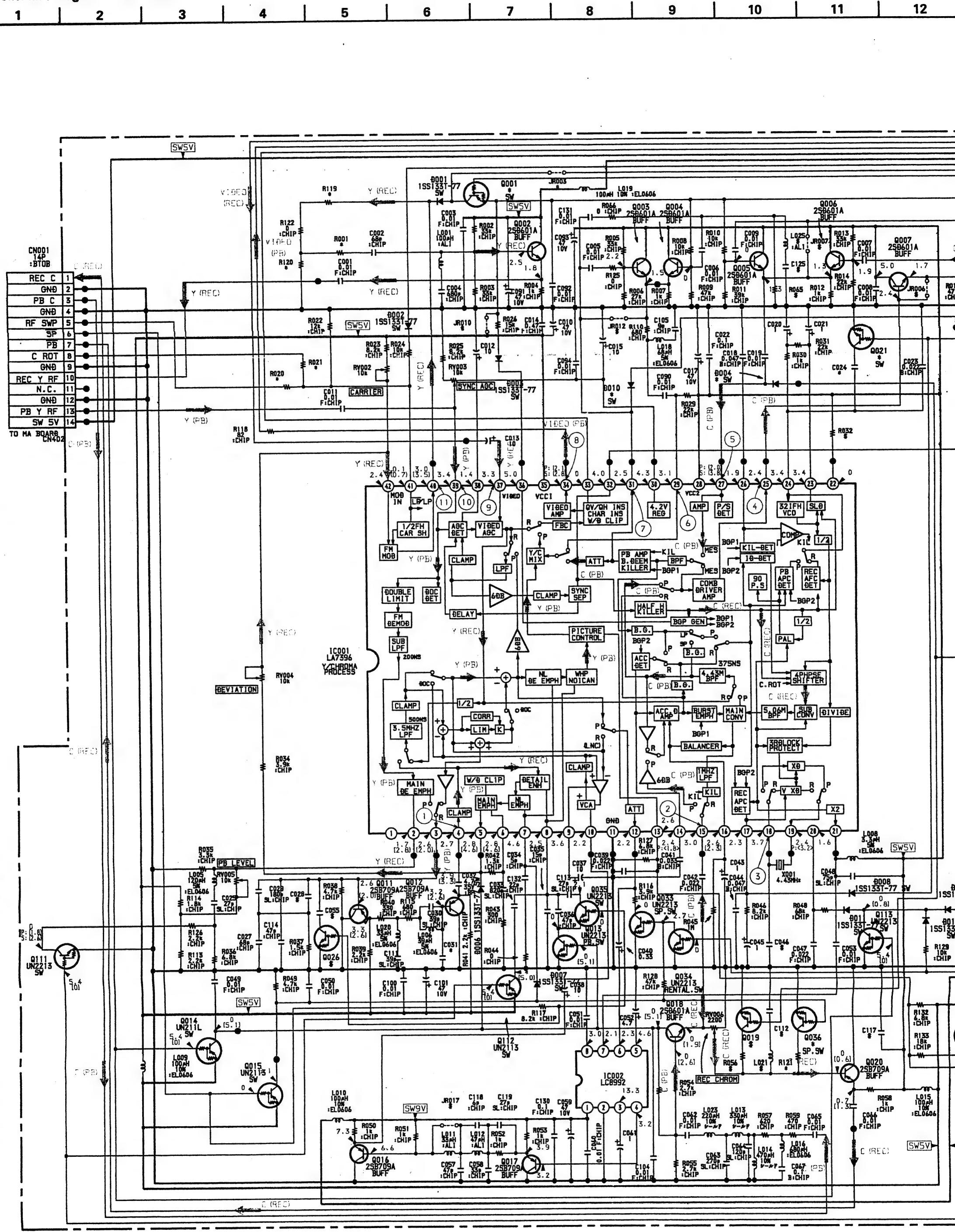


(KV-V1410B ONLY)



B-SS4714<AEP>-VP.

3) Schematic Diagram of YC2 Board



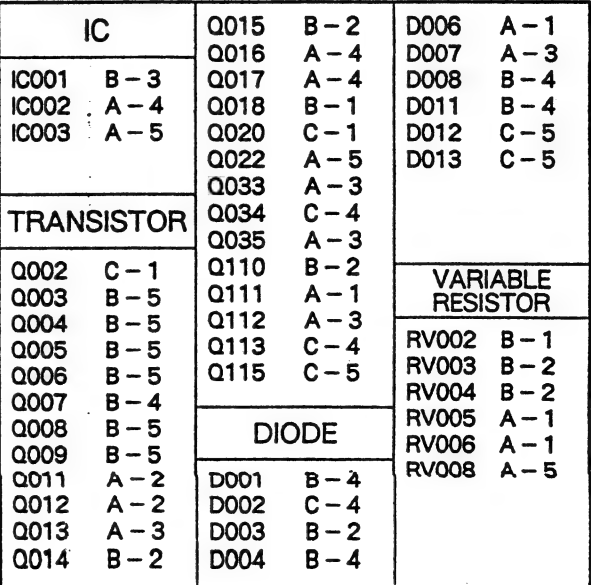
Schematic diagrams

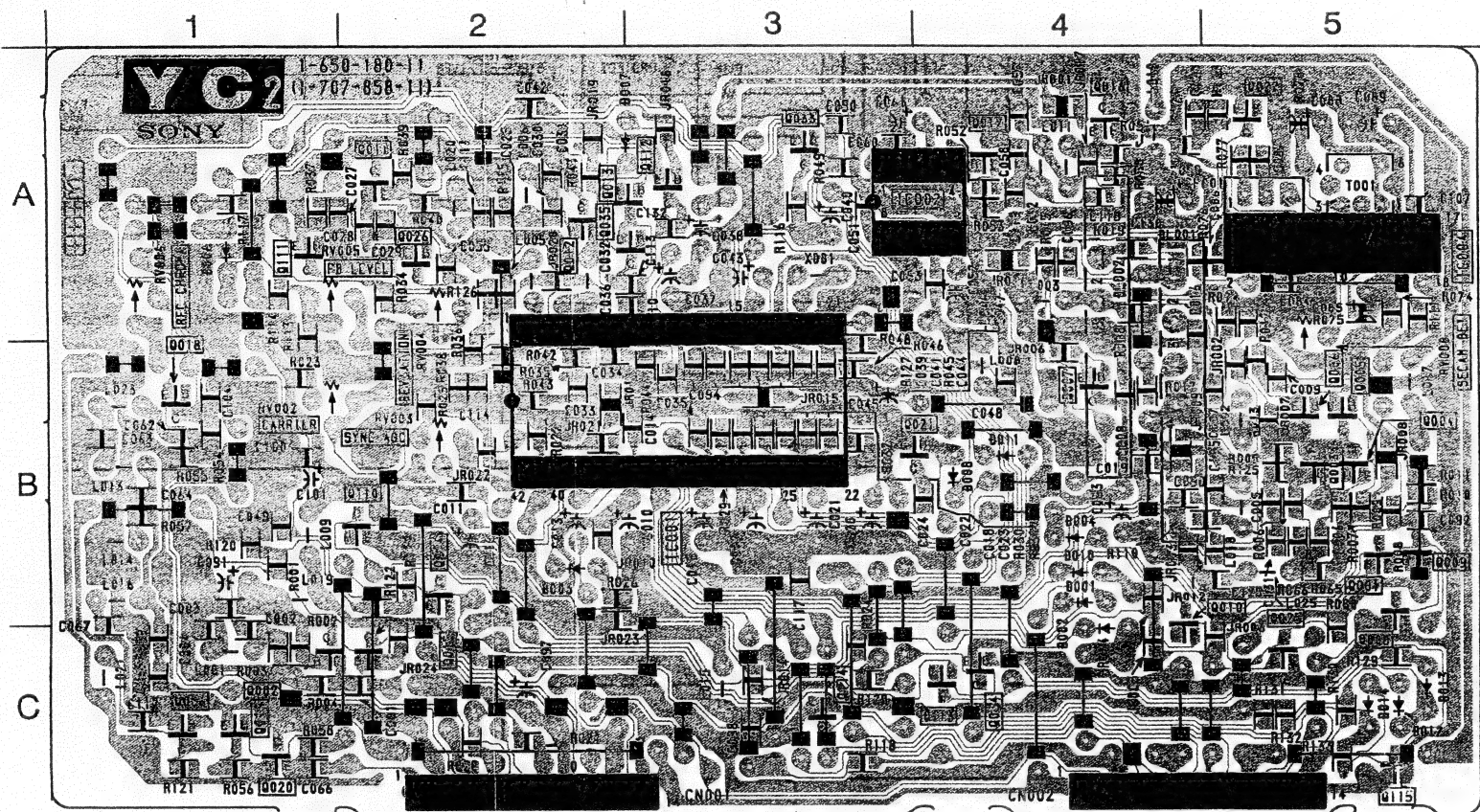
MF1 MF3

Schematic diagram

YC2 board

TK VP ZD boards

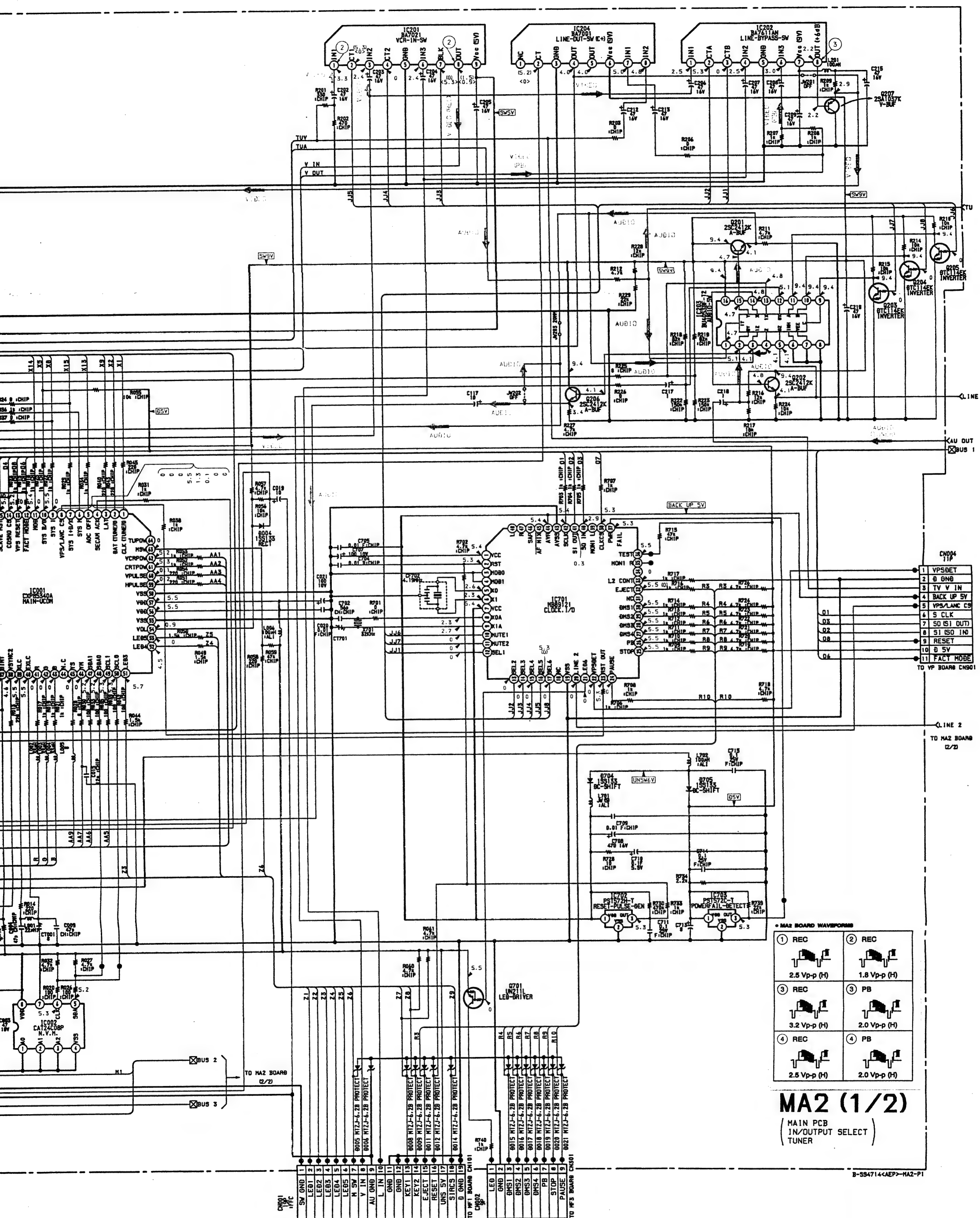




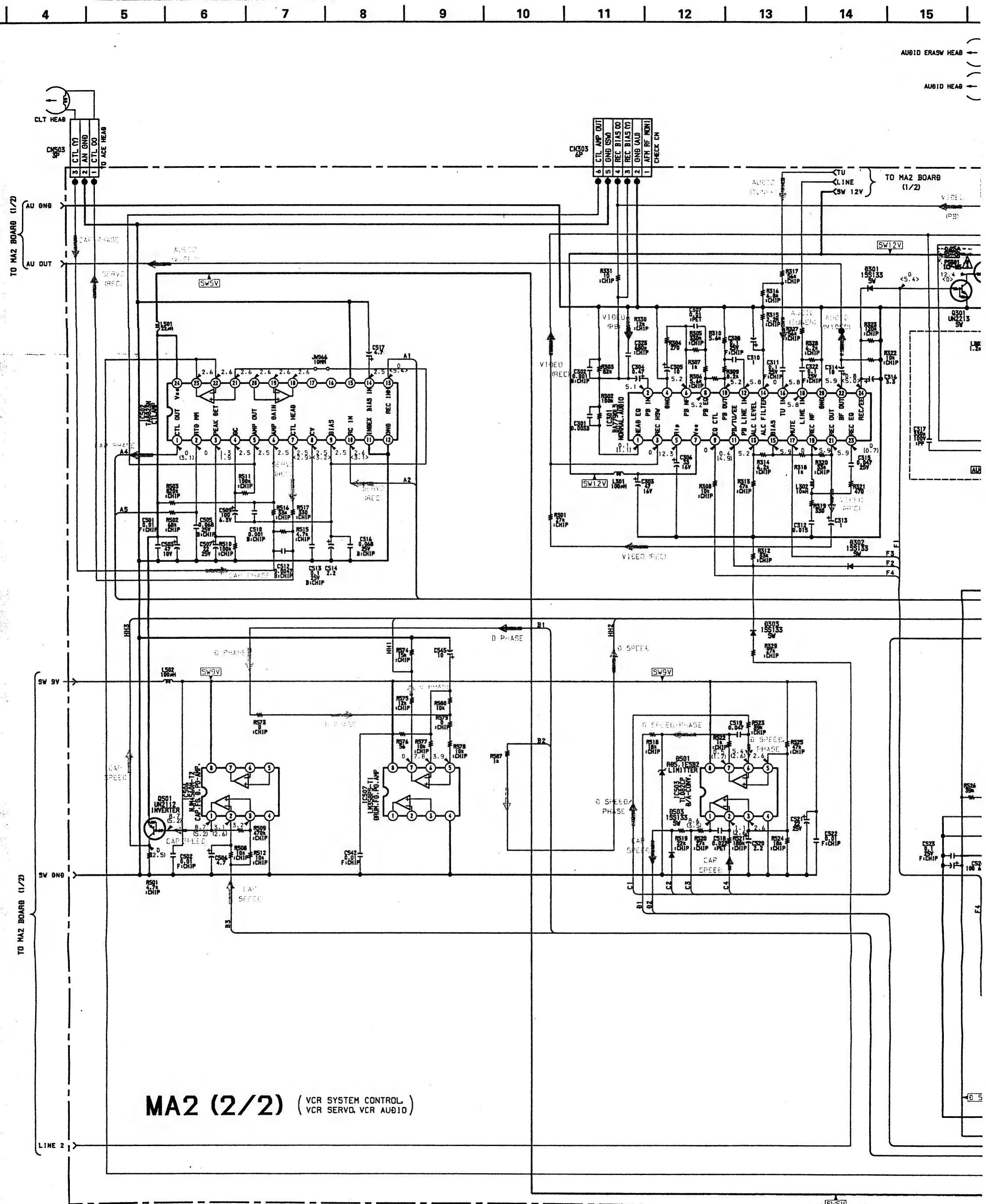
• YC2 BOARD WAVEFORMS

<p>① PB</p> <p>0.5 Vp-p (H)</p>	<p>② REC</p> <p>0.4 Vp-p (H)</p>	<p>② PB</p> <p>0.2 Vp-p (H)</p>	<p>③</p> <p>0.6 Vp-p (4.43MHz)</p>	<p>④ PB</p> <p>1.2 Vp-p (H)</p>
<p>⑤ PB</p> <p>0.2 Vp-p (H)</p>	<p>⑥ PB</p> <p>0.4 Vp-p (H)</p>	<p>⑦ PB</p> <p>0.6 Vp-p (H)</p>	<p>⑧ REC</p> <p>2.5 Vp-p (H)</p>	<p>⑧ PB</p> <p>Vp-p (H)</p>
<p>⑨ REC</p> <p>1.2 Vp-p (H)</p>	<p>⑩ PB</p> <p>0.3 Vp-p (H)</p>	<p>⑪ REC</p> <p>1.0 Vp-p (H)</p>		

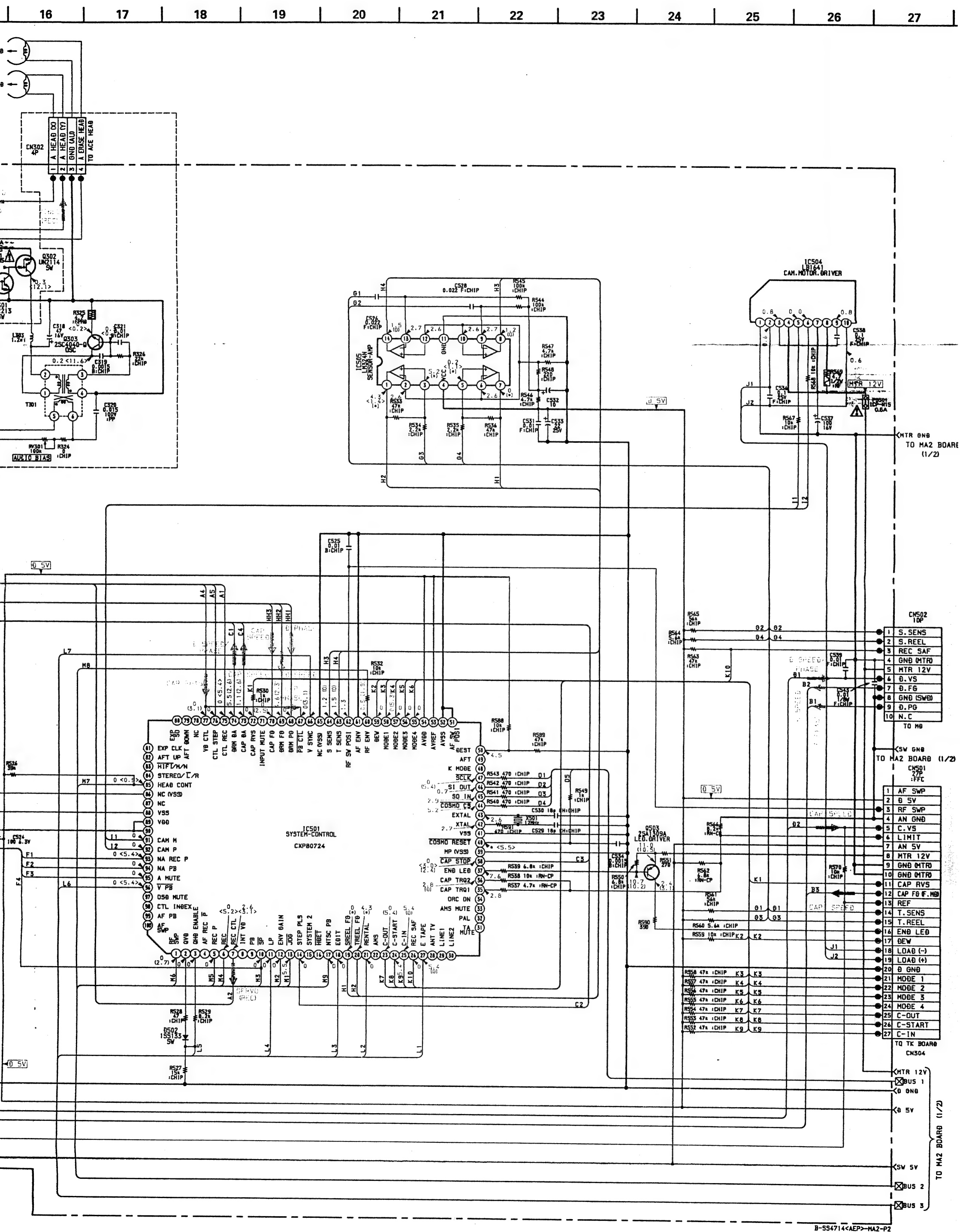




(5) Schematic Diagram of MA2 Board (2/2)



MA2 (2/2) (VCR SYSTEM CONTROL)
(VCR SERVO, VCR AUDIO)



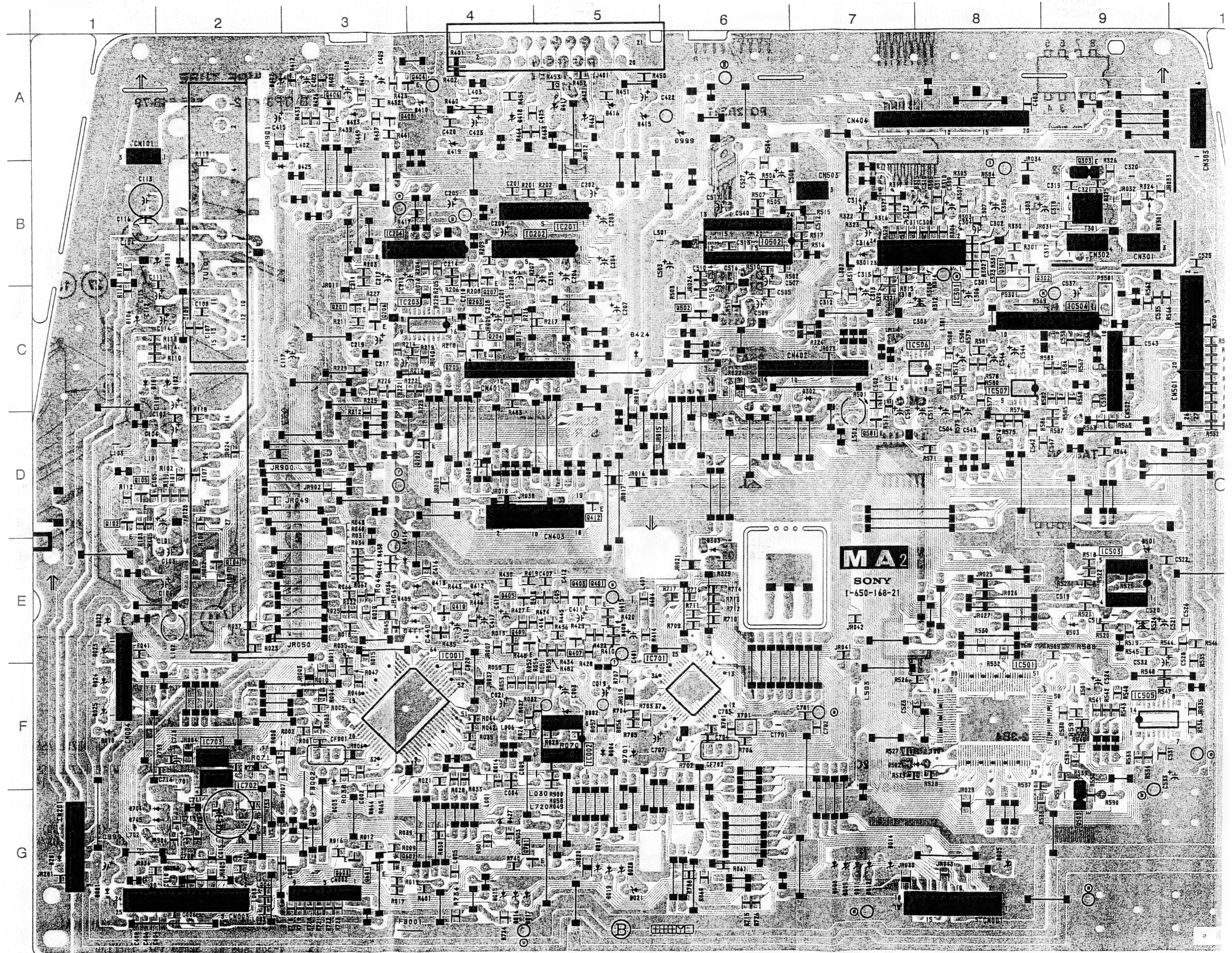
MA2

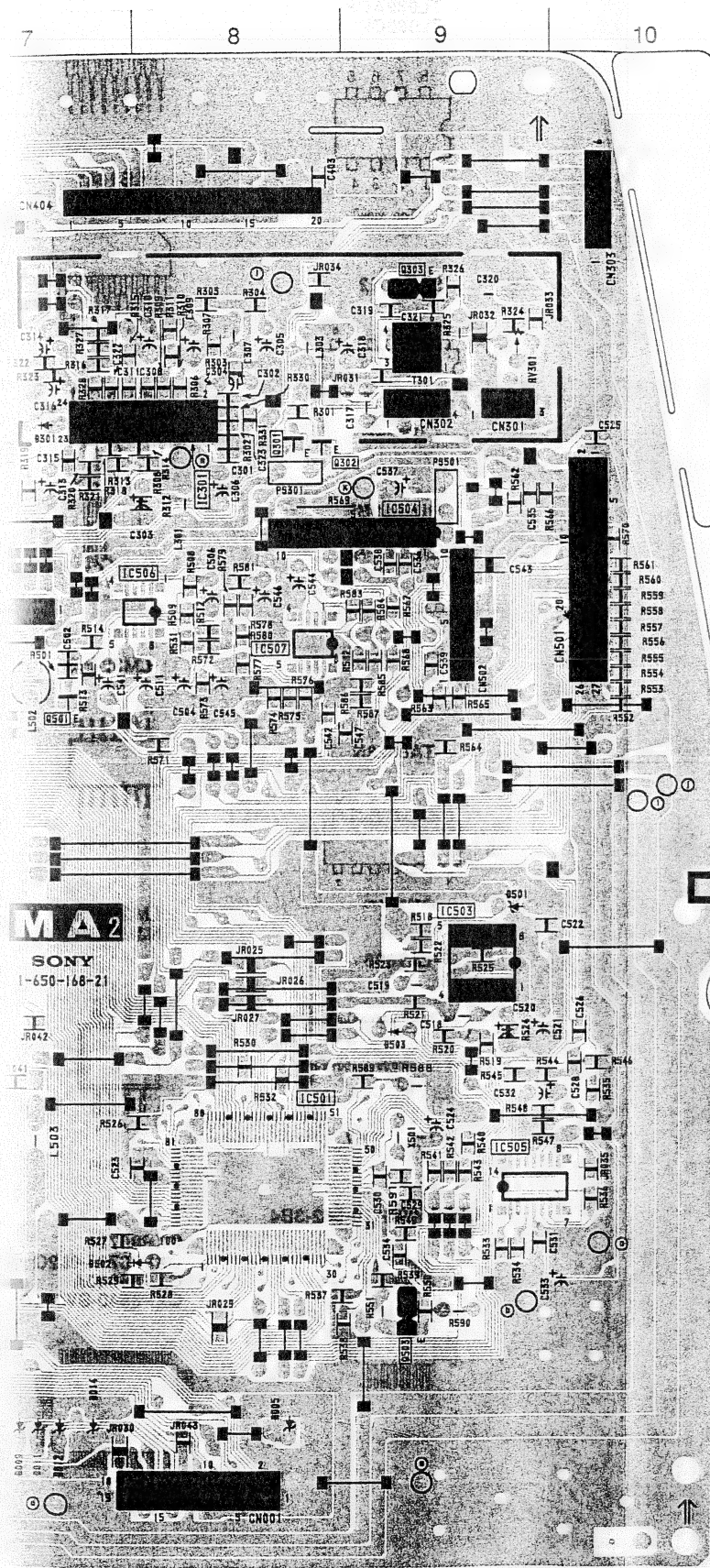
MAIN PCB, IN/OUTPUT SELECT
TUNER, VCR SYSTEM CONTROL,
VCR SERVO, VCR AUDIO

- MA2 Board -

• MA2 BOARD

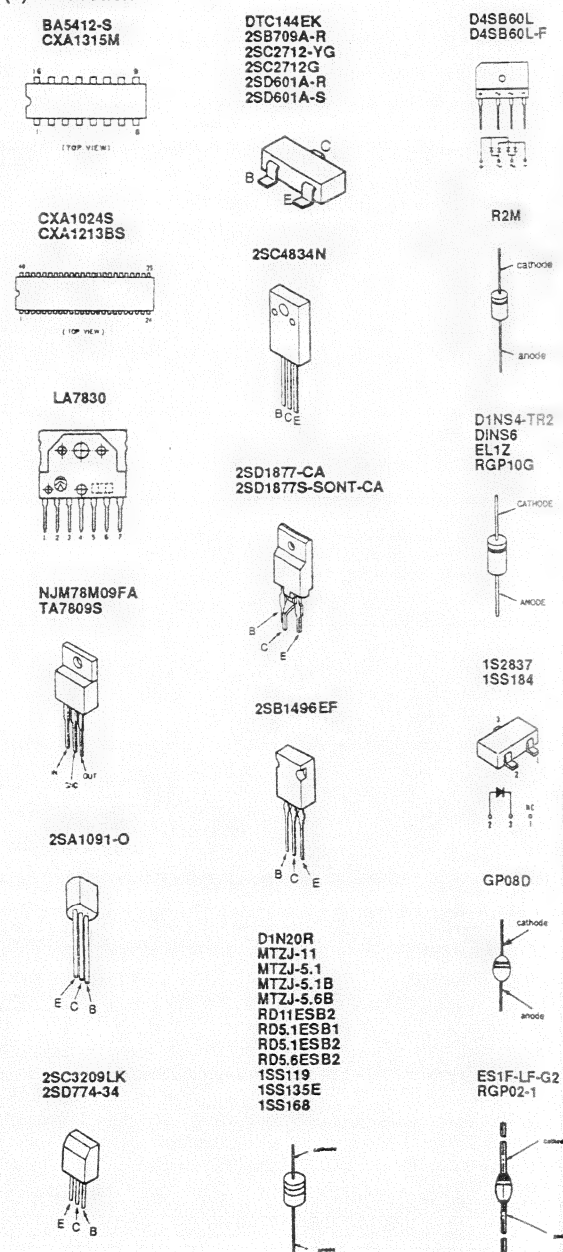
IC		DIODE	
IC001	D-3	D001	E-1
IC002	D-4	D002	D-4
IC201	B-3	D003	E-2
IC202	B-3	D004	D-4
IC203	B-3	D005	E-6
IC204	B-3	D008	E-5
IC301	B-6	D009	E-5
IC501	D-6	D011	E-5
IC502	B-5	D012	E-5
IC503	C-6	D014	E-5
IC504	B-6	D015	E-3
IC505	D-7	D016	E-3
IC506	B-5	D017	E-3
IC507	B-6	D018	E-4
IC701	D-4	D019	E-4
IC702	E-2	D020	E-4
IC703	D-1	D021	E-4
TRANSISTOR		D101	B-1
		D102	B-1
		D103	B-1
		D104	B-1
		D201	E-1
		D301	B-5
		D302	C-5
		D303	C-4
		D402	A-2
		D409	D-3
		D410	A-3
		D411	D-3
		D412	D-3
		D413	D-3
		D414	C-3
		D415	A-4
		D416	A-4
		D417	A-3
		D418	A-3
		D419	A-3
		D421	A-4
		D423	A-2
		D501	C-7
		D502	E-5
		D503	D-6
		D704	E-1
		D705	E-1
		TUNER	
		TU101	B-1
		CRYSTAL	
		X501	D-6
		X701	D-4





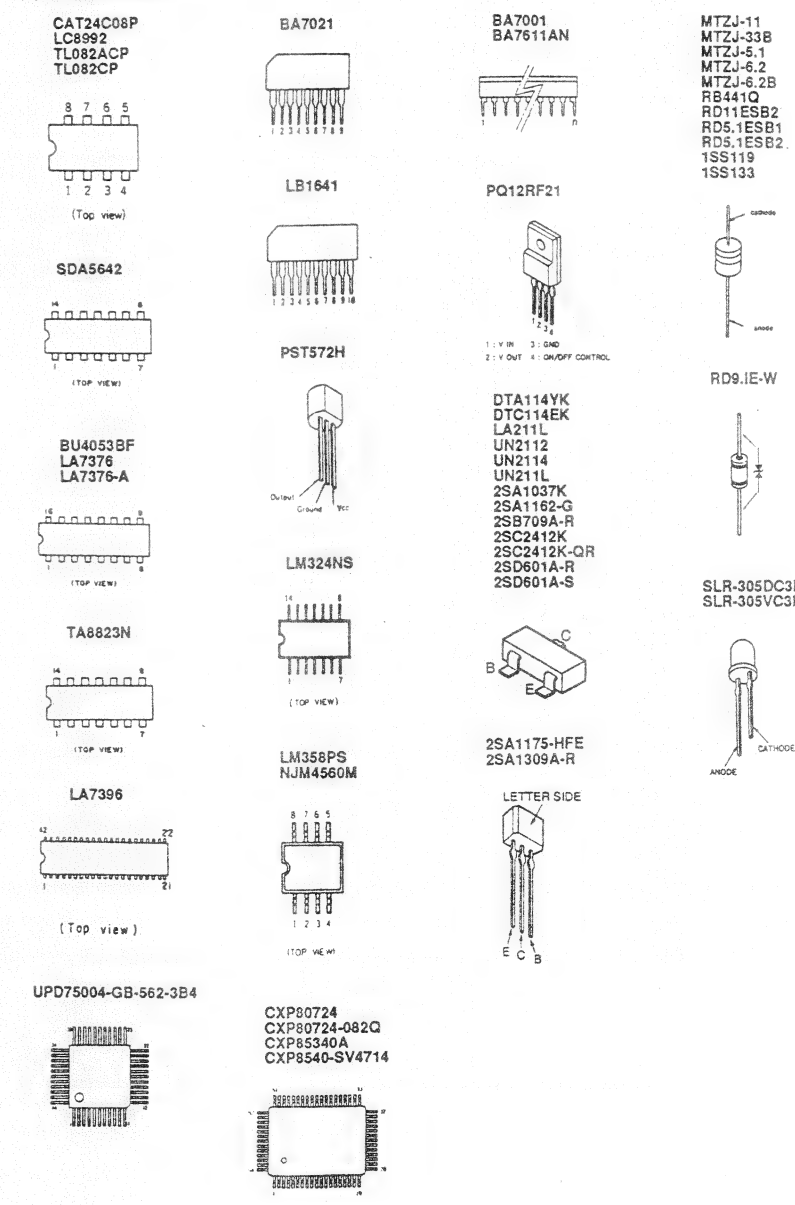
KV-V1410A/V1410D/V1410E
RM-846

5-5. SEMICONDUCTORS (1) TV Section



KV-V1410A/V1410D/V1410E
RM-846

(2) Video Section



SECTION 6
EXPLODED VIEWS (TV SECTION)

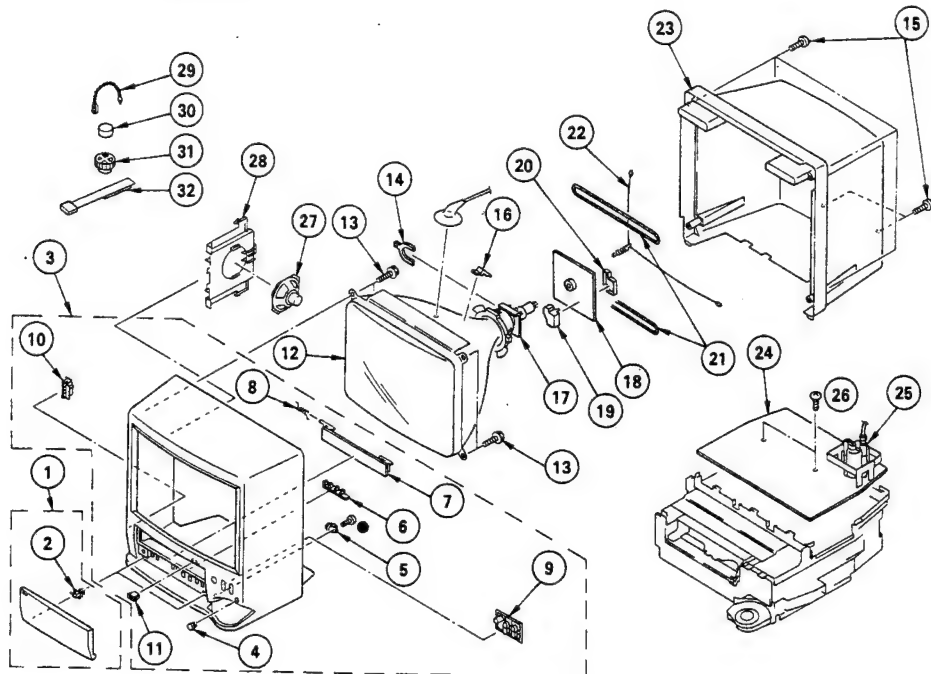
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

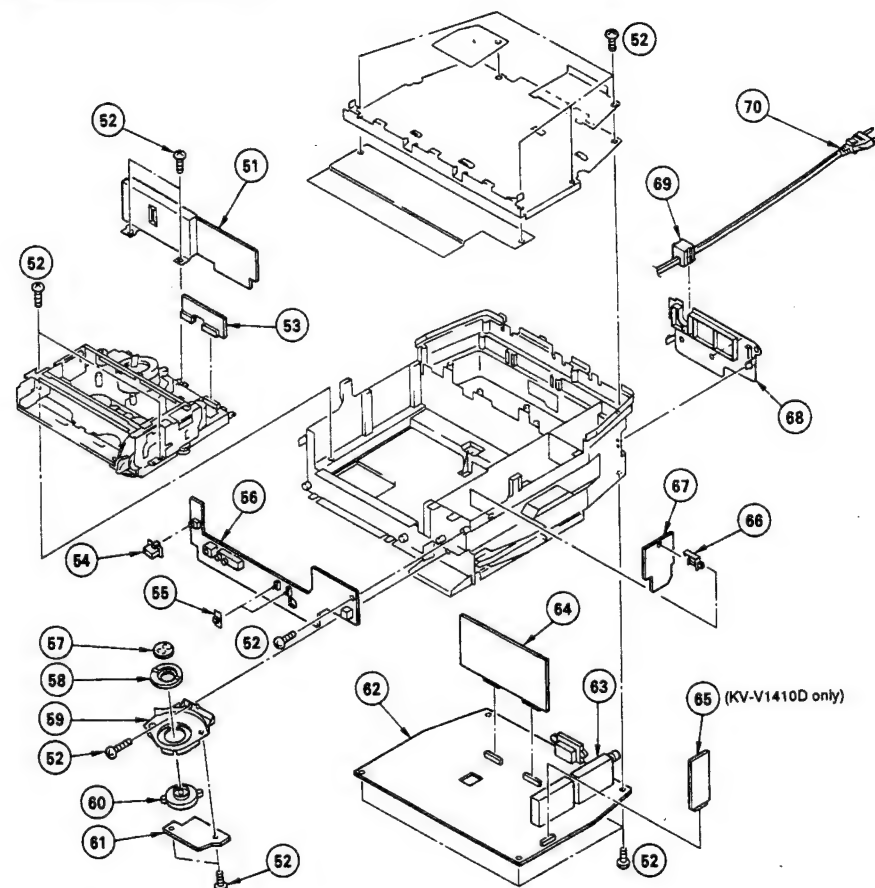
The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

6-1. PICTURE TUBE

●: BVTP3 \times 12 7-685-648-79

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
1	X-4031-394-3	DOOR ASSY		15	4-039-358-01	SCREW (4X16), (+) BV TAPPING	
2	3-703-035-12	SHAFT, LID		16	3-704-495-01	SPACER, DY	
3	X-4031-393-1	CABINET ASSY (WITH BEZEL ASSY)	4-11 (KV-V1410D)	17	A-1391-249-31	DEFLECTION Yoke V1410A2	
	X-4031-396-1	CABINET ASSY (WITH BEZEL ASSY)	4-11 (KV-V1410A/V1410E)	18	*A-1331-343-A	C BOARD, COMPLETE	
4	4-042-008-01	FILTER, REMOTE		19	*A-374-912-01	COVER (MAIN), CV VOL	
5	4-919-393-51	DAMPER		20	*A-374-913-01	COVER (REAR LID), CV VOL	
6	4-042-006-01	BUTTON, CONTROL (KV-V1410D)		21	A-1436-145-21	COTE, DEGAUSSING	
7	4-042-006-11	BUTTON, CONTROL (KV-V1410A/V1410E)		22	4-369-318-21	SPRING, TENSION	
8	4-042-012-21	DOOR, CASSETTE		23	*X-4031-706-2	COVER ASSY, REAR	
9	3-950-962-01	SPRING, FL		24	*A-1346-177-A	D2 BOARD, COMPLETE	
10	4-042-005-31	BUTTON, MULTI		25	A-1436-119-11	TRANSFORMER ASSY, FLYBACK (NR-2820A11)	
11	4-042-007-01	GUIDE (A), LIGHT		26	4-039-356-01	SCREW (3X12), (+) BV TAPPING	
12	*3-736-779-01	MAGNET		27	1-504-465-11	SPEAKER (8CM)	
13	A-1391-249-31	PICTURE TUBE (A34JBU10X)		28	4-042-017-01	BRACKET, SPEAKER	
14	4-365-808-01	SCREW (5), TAPPING		29	4-308-870-00	CLIP, LEAD WIRE	
	1-452-277-00	MAGNET, BMC		30	1-452-032-00	MAGNET, DISK: 10MM ϕ	
				31	1-452-094-00	MAGNET, ROTATABLE DISK: 15MM ϕ	
				32	X-4309-608-0	PERMALLOY ASSY, CONVERGENCE	

6-2. MAIN BOARDS ASSEMBLY



REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
51	*A-1394-557-A	RP3 BOARD, COMPLETE		61	*1-650-173-11	MF3 BOARD	
52	4-039-356-01	SCREW (3X12), (+) BV TAPPING		62	*A-1306-446-A	MA2 BOARD, COMPLETE	
53	*1-650-181-11	TK BOARD		63	1-693-233-11	TUNER, VIF (8TF-2C404)	
54	4-042-025-01	BUTTON, POWER		64	*A-1394-504-A	YC2 BOARD, COMPLETE	
55	4-042-018-21	BUTTON, SLIDE		65	*A-1347-086-A	VP BOARD, COMPLETE (KV-V1410D)	
56	*A-1301-920-A	MF1 BOARD, COMPLETE		66	*3-682-082-00	HOLDER (S), PCB	
57	X-4031-445-1	BUTTON ASSY, FUNCTION		67	*A-1390-426-A	ZD BOARD, COMPLETE	
58	3-953-514-21	RING, SHUTTLE		68	*4-043-475-01	TERMINAL BOARD	
59	X-4031-631-1	COVER ASSY, DMS		69	Δ 4-335-154-02	GROMMET, AC CORD	
60	1-572-662-61	SWITCH, ROTARY		70	Δ 1-765-286-11	CORD, POWER 2.5A/250V	

The components identified by shading and mark Δ are critical for safety. Replace only with part number specified.

SECTION 7

ELECTRICAL PARTS LIST (TV SECTION)

C D2

NOTE:

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS

All resistors are in ohms
F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS

COILS

* MF : μ F, PF : μ F * MMH : mH, UH : μ H

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
*A-1331-343-A	C BOARD, COMPLETE			R717	1-249-413-11	CARBON 470 5% 1/4W	
*4-374-912-01	COVER (MAIN), CV VOL			R719	1-247-807-31	CARBON 100 5% 1/4W	
*4-374-913-01	COVER (REAR LID), CV VOL			R720	1-249-429-11	CARBON 10K 5% 1/4W	
<CAPACITOR>				R722	1-249-442-11	CARBON 510 5% 1/4W	
C703	1-162-116-00	CERAMIC 680PF 10% 2KV		R723	1-249-413-11	CARBON 470 5% 1/4W	
C708	1-102-111-00	CERAMIC 270PF 10% 50V		R730	1-247-807-31	CARBON 100 5% 1/4W	
C712	1-102-109-00	CERAMIC 180PF 10% 50V		R732	1-249-415-11	CARBON 680 5% 1/4W	
C713	1-102-110-00	CERAMIC 220PF 10% 50V		R749	1-249-423-11	CARBON 3.3K 5% 1/4W	
C714	1-126-233-11	ELECT 22MF 20% 25V		R750	1-249-424-11	CARBON 3.9K 5% 1/4W	
C715	1-164-085-11	CERAMIC 0.001MF 10% 50V		R751	1-249-426-11	CARBON 5.6K 5% 1/4W	
C716	1-126-233-11	ELECT 22MF 20% 25V		R752	1-249-421-11	CARBON 2.2K 5% 1/4W	
C720	1-162-115-00	CERAMIC 330PF 10% 2KV		R754	1-249-419-11	CARBON 1.5K 5% 1/4W	
<CONNECTOR>				R755	1-249-413-11	CARBON 470 5% 1/4W	
CN701	1-695-915-11	TAB (CONTACT)		R756	1-249-411-11	CARBON 330 5% 1/4W	
CN703	1-564-508-11	PLUG, CONNECTOR 5P		R757	1-249-409-11	CARBON 220 5% 1/4W	
<SOCKET>				R758	1-249-421-11	CARBON 2.2K 5% 1/4W	
CRT701A	1-526-819-11	SOCKET, PICTURE TUBE		R759	1-249-421-11	CARBON 2.2K 5% 1/4W	
<COIL>				R760	1-249-421-11	CARBON 2.2K 5% 1/4W	
L701	1-408-423-00	INDUCTOR 150UH		<VARIABLE RESISTOR>			
<TRANSISTOR>				RV701	1-230-641-11	RES. ADJ. METAL GLAZE 2.2M	
Q704	8-729-906-70	TRANSISTOR BF871		RV702A	1-230-619-11	RES. ADJ. METAL GLAZE 110M	
Q705	8-729-906-70	TRANSISTOR BF871		RV703	1-230-641-11	RES. ADJ. METAL GLAZE 2.2M	
Q706	8-729-906-70	TRANSISTOR BF871		RV704	1-241-628-11	RES. ADJ. CARBON 2.2K	
Q708	8-729-230-49	TRANSISTOR 2SC2712-YG		RV705	1-241-763-11	RES. ADJ. CARBON 4.7K	
Q709	8-729-200-17	TRANSISTOR 2SA1091-0		RV706	1-241-763-11	RES. ADJ. CARBON 4.7K	
<RESISTOR>				RV707	1-241-763-11	RES. ADJ. CARBON 4.7K	
R701	1-202-883-11	SOLID 680K 20% 1/2W		RV708	1-241-763-11	RES. ADJ. CARBON 4.7K	
R702	1-202-838-00	SOLID 100K 20% 1/2W		RV709	1-241-763-11	RES. ADJ. CARBON 4.7K	
R703	1-202-719-00	SOLID 1M 20% 1/2W		*****			
R704	1-202-842-11	SOLID 220K 20% 1/2W		*A-1346-177-A	D2 BOARD, COMPLETE		
R706	1-202-824-00	SOLID 3.3K 20% 1/2W		*****			
R707	1-202-824-00	SOLID 3.3K 20% 1/2W		*4-381-906-01	SPRING (F)		
R708	1-202-824-00	SOLID 3.3K 20% 1/2W		4-382-854-11	SCREW (M3X10), P. SW (+)		
R709	1-215-899-11	METAL OXIDE 1.5K 5% 2W F		<CAPACITOR>			
R710	1-216-370-11	METAL OXIDE 1.2 5% 2W F		C027	1-124-360-00	ELECT 1000MF 20% 16V	
R711	1-215-899-11	METAL OXIDE 1.5K 5% 2W F		C032	1-126-803-11	ELECT 47MF 20% 16V	
R713	1-215-899-11	METAL OXIDE 15K 5% 2W F		C201	1-124-887-00	ELECT 3300MF 20% 16V	
R714	1-247-807-31	CARBON 100 5% 1/4W		C204	1-125-940-11	ELECT 330MF 20% 16V	
				C205	1-124-477-11	ELECT 47MF 20% 25V	
				C207	1-126-105-11	ELECT 1000MF 20% 35V	
				C208	1-124-907-11	ELECT 10MF 20% 50V	
				C210	1-124-907-11	ELECT 10MF 20% 50V	
				C212	1-104-792-51	ELECT 33MF 20% 16V	
				C213	1-124-907-11	ELECT 10MF 20% 50V	
				C217	1-124-477-11	ELECT 47MF 20% 16V	
				C217	1-124-907-11	ELECT 10MF 20% 50V	

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

D2

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C218	1-124-927-11	ELECT 4.7MF 20% 50V		C631	1-136-169-00	FILM 0.22MF 5% 50V	
C221	1-136-165-00	FILM 0.1MF 5% 50V		C632	1-136-169-00	FILM 0.22MF 5% 50V	
C224	1-126-101-11	ELECT 100MF 20% 16V		C633	1-124-477-11	ELECT 47MF 20% 16V	
C226	1-124-927-11	ELECT 4.7MF 20% 50V		C634	1-126-943-11	ELECT 2200MF 20% 25V	
C230	1-126-964-11	ELECT 10MF 20% 50V		C635	1-137-438-11	FILM 0.0082MF 5% 50V	
C301	1-136-169-00	FILM 0.22MF 5% 50V		C636	1-162-318-11	CERAMIC 0.001MF 10% 500V	
C302	1-124-925-11	ELECT 2.2MF 20% 50V		C637	1-164-735-11	CAP. CERAMIC 1500PF	
C303	1-136-169-00	FILM 0.22MF 5% 50V		C638	1-164-735-11	CAP. CERAMIC 1500PF	
C304	1-136-169-00	FILM 0.22MF 5% 50V		C639	1-164-735-11	CAP. CERAMIC 1500PF	
C305	1-136-169-00	FILM 0.22MF 5% 50V		C640	1-164-735-11	CAP. CERAMIC 1500PF	
C306	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C641	1-124-478-11	ELECT 100MF	20% 25V
C307	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C643	1-162-599-12	CERAMIC 0.0047MF	20% 400V
C308	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C644	1-162-599-12	CERAMIC 0.0047MF	20% 400V
C309	1-124-903-11	ELECT 1MF	20% 50V	C645	1-162-599-12	CERAMIC 0.0047MF	20% 400V
C310	1-124-907-11	ELECT 10MF	20% 50V	C646	1-124-556-11	ELECT 2200MF	20% 16V
C311	1-126-101-11	ELECT 100MF	20% 16V	C801	1-123-024-21	ELECT 33MF	20% 160V
C312	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C802	1-106-371-00	MYLAR 0.015MF	10% 200V
C313	1-136-173-00	FILM 0.47MF	5% 50V	C805	1-102-244-00	CERAMIC 220PF	10% 500V
C314	1-136-173-00	FILM 0.47MF	5% 50V	C809A	1-162-116-91	CERAMIC 680PF	10% 2KV
C315	1-136-167-00	FILM 0.15MF	5% 50V	C810A	1-106-367-91	MYLAR 0.01MF	5% 200V
C316	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V	C812	1-136-076-00	FILM 0.0085MF	3% 2KV
C317	1-164-161-11	CERAMIC CHIP 0.0022MF	50V	C815A	1-162-116-91	FILM 680PF	10% 2KV
C318	1-104-551-11	FILM CHIP 0.01MF	5% 16V	C816	1-124-634-11	ELECT 1MF	20% 250V
C319	1-126-233-11	ELECT 22MF	20% 25V	C820A	1-162-134-91	CERAMIC 470PF	10% 2KV
C320	1-124-120-11	ELECT 220MF	20% 16V	C821	1-108-704-11	MYLAR 0.1MF	10% 200V
C321	1-124-903-11	ELECT 1MF	20% 50V	C822	1-136-107-00	FILM 0.39MF	5% 200V
C322	1-163-133-00	CERAMIC CHIP 470PF	5% 50V	C825	1-102-228-00	CERAMIC 470PF	10% 500V
C323	1-136-169-00	FILM 0.22MF	5% 50V	C834	1-137-323-11	FILM CHIP 0.01MF	5% 16V
C325	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V	C850	1-126-105-11	ELECT 1000MF	20% 35V
C326	1-124-907-11	ELECT 10MF	20% 50V	C851	1-107-637-11	ELECT 22MF	20% 160V
C327	1-124-477-11	ELECT 47MF	20% 16V	C852	1-162-114-00	CERAMIC 0.0047MF	2KV
C331	1-163-031-11	CERAMIC CHIP 0.01MF	50V	C853	1-162-318-11	CERAMIC 0.001MF	10% 500V
C335	1-164-346-11	CERAMIC CHIP 1MF	16V	C854	1-124-480-11	ELECT 470MF	20% 25V
C355	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C856	1-162-318-11	CERAMIC 0.001MF	10% 500V
C498	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V	C857	1-108-702-11	MYLAR 0.068MF	10% 200V
C501	1-124-120-11	ELECT 220MF	20% 16V	C860	1-102-228-00	CERAMIC 470PF	10% 500V
C503	1-164-085-11	CERAMIC 0.001MF	10% 50V	C862	1-124-907-11	ELECT 10MF	20% 50V
C512	1-131-350-00	TANTALUM 3.3MF	10% 25V	C870	1-104-549-11	FILM CHIP 0.0068MF	5% 16V
C513	1-124-903-11	ELECT 1MF	20% 50V	C901A	1-136-517-12	FILM 0.22MF	20% 300V
C520	1-163-035-00	CERAMIC CHIP 0.047MF	50V	C903A	1-136-517-12	FILM 0.22MF	20% 300V
C530	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C904A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C531	1-124-482-11	ELECT 33MF	20% 25V	C905A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C533	1-163-129-00	CERAMIC CHIP 330PF	5% 50V	C906A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C551	1-126-104-11	ELECT 470MF	20% 35V	C907A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C552	1-104-788-11	ELECT 100MF	20% 35V	C908A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C553	1-137-292-11	FILM CHIP 0.0068MF	5% 16V	C909A	1-162-599-71	CERAMIC 0.0047MF	20% 400V
C555	1-163-093-00	CERAMIC CHIP 10PF	5% 50V	C914A	1-161-964-61	CERAMIC 0.0047MF	250V
C558	1-124-480-11	ELECT 470MF	20% 25V	C915A	1-161-964-61	CERAMIC 0.0047MF	250V
C560	1-124-907-11	ELECT 10MF	20% 50V	C917	1-125-318-00	ELECT (BLOCK) 220MF	20% 400V
C562	1-124-443-00	ELECT 100MF	20% 10V	C919	1-162-599-12	CERAMIC 0.0047MF	20% 400V
C603	1-126-101-11	ELECT 100MF	20% 16V	C1401	1-136-169-00	FILM 0.22MF	5% 50V
C615	1-164-625-11	CERAMIC 680PF	10% 500V	C1402	1-136-169-00	FILM 0.22MF	5% 50V
C616	1-136-169-00	FILM 0.22MF	5% 50V	C1403	1-136-169-00	FILM 0.22MF	5% 50V
C617	1-136-169-00	FILM 0.22MF	5% 50V	C1404	1-136-169-00	FILM 0.22MF	5% 50V
C618	1-164-625-11	CERAMIC 680PF	10% 500V	C1405	1-136-169-00	FILM 0.22MF	5% 50V
C619	1-164-625-11	CERAMIC 680PF	10% 500V	C1406	1-136-169-00	FILM 0.22MF	5% 50V
C620	1-124-903-11	ELECT 1MF	20% 50V	C1407	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C621	1-137-216-11	FILM 0.0082MF	5% 0	C1408	1-165-319-11	CERAMIC CHIP 0.1MF	50V
C623	1-136-601-11	FILM 0.01MF	5% 630V	C1409	1-164-085-11	CERAMIC 0.001MF	10% 50V
C624	1-124-564-11	ELECT 4700MF	20% 25V	C1413	1-124-120-11	ELECT 220MF	20% 16V
C626	1-123-024-21	ELECT 33MF	160V	C1414	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C627	1-136-601-11	FILM 0.01MF	5% 630V	C1415	1-136-165-00	FILM 0.1MF	5% 50V
C629	1-108-686-11	MYLAR 0.0033MF	10% 200V	C1417	1-164-346-11	CERAMIC CHIP 1MF	16V
C630	1-124-907-11	ELECT 10MF	20% 50V				

D2

D2

The components identified by
shading and mark Δ are critical
for safety.
Replace only with part number
specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
C1418	1-164-346-11	CERAMIC CHIP 1M Ω	16V
C1456	1-126-964-11	ELECT 10M Ω	20%
C1461	1-216-295-00	METAL GLAZE 0	5% 1/10W
<CONNECTOR>			
CN304	*1-564-506-11	PLUG. CONNECTOR 3P	
CN305	*1-564-508-11	PLUG. CONNECTOR 5P	
CN306	1-695-348-21	PIN. CONNECTOR (PC BOARD) 25P	
CN307	1-695-330-21	PIN. CONNECTOR (PC BOARD) 7P	
CN501	*1-508-768-00	PIN. CONNECTOR (5MM PITCH) 6P	
CN901	*1-580-843-11	PIN. CONNECTOR (POWER)	
CN903	*1-508-786-00	PIN. CONNECTOR (5MM PITCH) 2P	
CN904	*1-508-786-00	PIN. CONNECTOR (5MM PITCH) 2P	
CN905	*1-564-509-11	PLUG. CONNECTOR 6P	
DY1	*1-580-798-11	CONNECTOR PIN (DY) 6P	
<TRIMMER>			
CV443	1-141-443-11	TRIMMER, CERAMIC	
<DIODE>			
D121	8-719-911-19	DIODE 1SS119	
D201	8-719-801-78	DIODE 1SS184	
D202	8-719-914-42	DIODE DA204K	
D203	8-719-901-33	DIODE 1SS133	
D301	8-719-110-22	DIODE RD11ESB2	
D305	8-719-109-85	DIODE RD5.1ESB2	
D310	8-719-801-78	DIODE 1SS184	
D501	8-719-901-33	DIODE 1SS133	
D510	8-719-109-84	DIODE RD5.1ESB1	
D511	8-719-982-11	DIODE MTJ2-4.38	
D551	8-719-908-03	DIODE GP08D	
D561	8-719-901-33	DIODE 1SS133	
D581	8-719-901-33	DIODE 1SS133	
D602	8-719-901-33	DIODE 1SS133	
D604	8-719-901-33	DIODE 1SS133	
D607	8-719-510-48	DIODE D1K20R	
D608	8-719-510-48	DIODE D1K20R	
D609	8-719-510-48	DIODE D1K20R	
D610	8-719-510-48	DIODE D1K20R	
D612	8-719-032-12	DIODE D1N56	
D613	8-719-032-12	DIODE D1N56	
D614	8-719-510-13	DIODE D10SC4MR	
D615	8-719-510-12	DIODE D10SC4M	
D616	8-719-510-64	DIODE D1NL20	
D617	8-719-510-64	DIODE D1NL20	
D618	8-719-510-64	DIODE D1NL20	
D619	8-719-510-64	DIODE D1NL20	
D620	8-719-901-33	DIODE 1SS133	
D621	8-719-109-89	DIODE RD5.6ESB2	
D622	8-719-510-48	DIODE D1K20R	
D623	8-719-901-33	DIODE 1SS133	
D624	8-719-901-33	DIODE 1SS133	
D625	8-719-901-33	DIODE 1SS133	
D626	8-719-921-89	DIODE MTJ2-13C	
D627	8-719-901-33	DIODE 1SS133	
D629	8-719-032-10	DIODE D1N54-TR2	
D630	8-719-032-12	DIODE D1N56	
D631	8-719-032-10	DIODE D1N54-TR2	
D632	8-719-303-49	DIODE R2M	
D635	8-719-901-33	DIODE 1SS133	
D636	Δ 8-719-032-10	DIODE D1N54-TR2	

REF. NO.	PART NO.	DESCRIPTION	REMARK
D637	Δ 8-719-032-10	DIODE D1N54-TR2	
D701	8-719-901-33	DIODE 1SS133	
D804	8-719-901-33	DIODE 1SS133	
D851	8-719-302-43	DIODE EL12	
D852	8-719-028-71	DIODE ES1F-LF-G2	
D853	8-719-302-43	DIODE EL12	
D855	8-719-302-43	DIODE EL12	
D857	8-719-908-03	DIODE GP08D	
D858	8-719-908-03	DIODE GP08D	
D861	8-719-901-33	DIODE 1SS133	
D862	8-719-901-33	DIODE 1SS133	
D901	Δ 8-719-510-63	DIODE D4S860L-F	
D903	8-719-901-33	DIODE 1SS133	
D1401	8-719-010-34	DIODE UZ-4.785C	
D1402	8-719-404-46	DIODE MA110	
D1403	8-719-921-69	DIODE MTJ2-9.1	
D1404	8-719-921-69	DIODE MTJ2-9.1	
D1405	8-719-921-69	DIODE MTJ2-9.1	
D1406	8-719-801-78	DIODE 1SS184	
D1408	8-719-404-46	DIODE MA110	
D1409	8-719-404-46	DIODE MA110	
D1410	8-719-404-46	DIODE MA110	
<DELAY LINE>			
DL301	1-415-122-31	DELAY LINE, 1H (PAL)	
<FUSE>			
F901	Δ 1-576-231-21	FUSE (H.B.C.) 4A/250V	
	1-533-230-11	HOLDER, FUSE; F901	
	4-201-057-01	COVER, FUSE; F901	
<FERRITE BEAD>			
FB601	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB602	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB603	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB604	1-412-911-11	INDUCTOR, FERRITE BEAD	
FB605	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB606	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB607	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB608	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
FB609	1-410-396-41	FERRITE BEAD INDUCTOR 0.45UH	
<IC>			
IC201	8-759-174-28	IC BA5412-S	
IC203	8-759-145-27	IC UPC1406HA	
IC301	8-752-058-64	IC CXA1213BS	
IC302	8-752-058-68	IC CXA1315M	
IC304	8-752-030-31	IC CXA1024S	
IC306	8-759-701-59	IC NJM78M09FA	
IC551	8-759-801-98	IC LA7830	
IC602	Δ 1-810-050-11	POWER MODULE DM-47	
<COIL>			
L301	1-412-785-41	INDUCTOR 5.6UH	
L601	1-406-662-11	COIL, CHOKE 33UH	
L603	1-412-533-21	INDUCTOR 47UH	
L604	1-412-533-21	INDUCTOR 47UH	
L805	Δ 1-409-542-11	COIL, HORIZONTAL LINEARITY (HLC)	
L808	1-412-446-11	INDUCTOR 3.3MHM	

REF. NO.	PART NO.	DESCRIPTION	REMARK
L821	1-406-677-21	COIL, CHOKE 10MHM	
<IC LINK>			
PS601	Δ 1-532-846-21	LINK, IC 5.0A	
<TRANSISTOR>			
Q024	8-729-901-01	TRANSISTOR DTC144EK	
Q101	8-729-200-17	TRANSISTOR 2SA1091-0	
Q202	8-729-901-04	TRANSISTOR DTA114EK	
Q203	8-729-422-29	TRANSISTOR 2SD601A-S	
Q204	8-729-422-29	TRANSISTOR 2SD601A-S	
Q301	8-729-422-29	TRANSISTOR 2SD601A-S	
Q302	8-729-422-29	TRANSISTOR 2SD601A-S	
Q303	8-729-422-29	TRANSISTOR 2SD601A-S	
Q304	8-729-422-29	TRANSISTOR 2SD601A-S	
Q305	8-729-422-29	TRANSISTOR 2SD601A-S	
Q306	8-729-422-29	TRANSISTOR 2SD601A-S	
Q307	8-729-901-01	TRANSISTOR DTC144EK	
Q309	8-729-422-29	TRANSISTOR 2SD601A-S	
Q310	8-729-901-01	TRANSISTOR DTC144EK	
Q311	8-729-422-37	TRANSISTOR 2SB709A-R	
Q313	8-729-422-29	TRANSISTOR 2SD601A-S	
Q314	8-729-422-29	TRANSISTOR 2SD601A-S	
Q315	8-729-422-29	TRANSISTOR 2SD601A-S	
Q316	8-729-422-29	TRANSISTOR 2SD601A-S	
Q317	8-729-901-01	TRANSISTOR DTC144EK	
Q318	8-729-422-29	TRANSISTOR 2SD601A-S	
Q319	8-729-422-29	TRANSISTOR 2SD601A-S	
Q501	8-729-422-37	TRANSISTOR 2SB709A-R	
Q551	8-729-901-01	TRANSISTOR DTC144EK	
Q552	8-729-901-01	TRANSISTOR DTC144EK	
Q601	8-729-927-85	TRANSISTOR 2SB1496EF	
Q602	8-729-422-29	TRANSISTOR 2SD601A-S	
Q603	8-729-026-69	TRANSISTOR 2SC4833P	
Q604	8-729-026-69	TRANSISTOR 2SC4833P	
Q605	8-729-927-85	TRANSISTOR 2SB1496EF	
Q606	8-729-422-29	TRANSISTOR 2SD601A-S	
Q607	8-729-422-29	TRANSISTOR 2SD601A-S	
Q608	8-729-927-85	TRANSISTOR 2SB1496EF	
Q609	8-729-422-37	TRANSISTOR 2SB709A-R	
Q611	8-729-422-37	TRANSISTOR 2SB709A-R	
Q612	8-729-422-29	TRANSISTOR 2SD601A-S	
Q613	8-729-422-29	TRANSISTOR 2SD601A-S	
Q801	8-729-140-96	TRANSISTOR 2SD774-34	
Q802	8-729-810-49	TRANSISTOR 2SD1877S-SONY-CA	
Q803	8-729-422-29	TRANSISTOR 2SD601A-S	
Q804	8-729-422-37	TRANSISTOR 2SB709A-R	
Q1406	8-729-422-37	TRANSISTOR 2SB709A-R	
Q1407	8-719-421-69	DIODE MA133	
<RESISTOR>			
JR002	1-216-296-91	METAL GLAZE 0	5% 1/8W
JR003	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR004	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR006	1-216-296-91	METAL GLAZE 0	5% 1/8W
JR007	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR009	1-216-295-00	METAL GLAZE 0	5% 1/10W
JR010	1-216-296-91	METAL GLAZE 0	5% 1/8W
JR011	1-216-296-91	METAL GLAZE 0	5% 1/8W
JR015	1-216-296-91	METAL GLAZE 0	5% 1/8W
JR016	1-216-295-00	METAL GLAZE 0	5% 1/10W

REF. NO.	PART NO.	DESCRIPTION			REMARK
JR017	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR018	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR019	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR020	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR021	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR022	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR023	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR024	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR025	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR026	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR028	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR029	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR030	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR031	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR032	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR033	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR034	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR037	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR038	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR039	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR041	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR042	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR043	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR044	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR045	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR046	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR047	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR048	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR049	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR051	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR052	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR054	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR055	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR056	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR058	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR062	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR070	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR071	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR073	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR074	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR078	1-216-296-91	METAL GLAZE	0	5%	1/8W
JR201	1-216-295-00	METAL GLAZE	0	5%	1/10W
JR202	1-216-295-00	METAL GLAZE	0	5%	1/10W
JW045	1-249-411-11	CARBON	330	5%	1/4W
R123	1-216-033-00	METAL GLAZE	220	5%	1/10W
R124	1-216-033-00	METAL GLAZE	220	5%	1/10W
R126	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R201	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R203	1-216-295-00	METAL GLAZE	0	5%	1/10W
R204	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R210	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R211	1-216-085-00	METAL GLAZE	33K	5%	1/10W
R213	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R214	1-216-053-00	METAL GLAZE	1.5K	5%	1/10W
R215	1-216-295-00	METAL GLAZE	0	5%	1/10W
R220	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R221	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R223	1-249-395-11	CARBON	15	5%	1/4W F
R224	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R225	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R231	1-216-295-00	METAL GLAZE	0	5%	1/10W
R232	1-216-295-00	METAL GLAZE	0	5%	1/10W
R236	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W

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REF. NO.	PART NO.	DESCRIPTION	REMARK
R237	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R301	1-216-117-00	METAL GLAZE 680K 5%	1/10W
R302	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R303	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R304	1-216-117-00	METAL GLAZE 680K 5%	1/10W
R305	1-216-174-00	METAL GLAZE 100 5%	1/8W
R306	1-216-174-00	METAL GLAZE 100 5%	1/8W
R307	1-216-174-00	METAL GLAZE 100 5%	1/8W
R308	1-216-031-00	METAL GLAZE 180 5%	1/10W
R309	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R310	1-216-041-00	METAL GLAZE 470 5%	1/10W
R311	1-216-685-11	METAL CHIP 27K 0.50%	1/10W
R312	1-216-133-00	METAL GLAZE 3.3M 5%	1/10W
R313	1-216-033-00	METAL GLAZE 220 5%	1/10W
R314	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R315	1-216-041-00	METAL GLAZE 470 5%	1/10W
R316	1-216-039-00	METAL GLAZE 390 5%	1/10W
R317	1-216-198-91	METAL GLAZE 1K 5%	1/8W
R318	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R319	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R320	1-249-409-11	CARBON 220 5%	1/4W F
R321	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R322	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R323	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R324	1-216-115-00	METAL GLAZE 560K 5%	1/10W
R325	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R326	1-216-117-00	METAL GLAZE 680K 5%	1/10W
R327	1-216-198-91	METAL GLAZE 1K 5%	1/8W
R328	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R329	1-216-295-00	METAL GLAZE 0 5%	1/10W
R330	1-215-861-00	METAL OXIDE 47 5%	1W F
R331	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R332	1-216-033-00	METAL GLAZE 220 5%	1/10W
R333	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R334	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R335	1-216-095-00	METAL GLAZE 82K 5%	1/10W
R336	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R337	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R338	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R339	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R341	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R350	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R351	1-216-045-00	METAL GLAZE 680 5%	1/10W
R352	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R353	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R354	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R355	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R356	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R357	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R359	1-216-103-91	METAL GLAZE 180K 5%	1/10W
R360	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R362	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R370	1-216-033-00	METAL GLAZE 220 5%	1/10W
R371	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R372	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R373	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R374	1-216-033-00	METAL GLAZE 220 5%	1/10W
R376	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R377	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R379	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R380	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R381	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R385	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R386	1-216-033-00	METAL GLAZE 220 5%	1/10W

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R390	1-216-190-00	METAL GLAZE 470 5%	1/8W
R391	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R392	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R393	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R394	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R395	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R396	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R397	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R408	1-216-463-00	METAL OXIDE 12K 5%	2W F
R432	1-216-033-00	METAL GLAZE 220 5%	1/10W
R498	1-216-025-00	METAL GLAZE 100 5%	1/10W
R501	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R502	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R503	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R504	1-216-105-00	METAL GLAZE 220K 5%	1/10W
R517	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R518	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R520	1-216-043-00	METAL GLAZE 560 5%	1/10W
R521	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R522	1-216-037-00	METAL GLAZE 330 5%	1/10W
R532	1-216-033-00	METAL GLAZE 220 5%	1/10W
R538	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R551	1-216-033-00	METAL GLAZE 220 5%	1/10W
R552	1-215-867-00	METAL OXIDE 470 5%	1W F
R553	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R556	1-216-429-00	METAL OXIDE 270 5%	1W F
R557	1-216-393-00	METAL OXIDE 2.2 5%	3W F
R558	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R559	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R562	1-249-412-11	CARBON 390 5%	1/4W F
R563	1-247-885-00	CARBON 180K 5%	1/4W
R564	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R565	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R566	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R567	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R569	1-247-887-00	CARBON 220K 5%	1/4W
R602	1-249-421-11	CARBON 2.2K 5%	1/4W F
R603	1-249-377-11	CARBON 0.47 5%	1/4W F
R604	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R607	1-249-377-11	CARBON 0.47 5%	1/4W F
R609	1-249-420-11	CARBON 1.8K 5%	1/4W
R610	1-202-933-61	FUSIBLE 0.1 10%	1/2W F
R611	1-249-420-11	CARBON 1.8K 5%	1/4W
R612	1-216-349-00	METAL OXIDE 1 5%	1W F
R613	1-216-349-00	METAL OXIDE 1 5%	1W F
R614	1-215-904-11	METAL OXIDE 100K 5%	2W F
R615	1-215-904-11	METAL OXIDE 100K 5%	2W F
R616	1-215-858-00	METAL OXIDE 15 5%	1W F
R617	1-215-858-00	METAL OXIDE 15 5%	1W F
R618	1-212-855-61	FUSIBLE 8.2 5%	1/4W F
R619	1-212-952-61	FUSIBLE 5.6 5%	1/2W F
R620	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R621	1-249-377-11	CARBON 0.47 5%	1/4W F
R622	1-249-377-11	CARBON 0.47 5%	1/4W F
R623	1-249-377-11	CARBON 0.47 5%	1/4W F
R624	1-249-417-11	CARBON 1K 5%	1/4W F
R625	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R626	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R627	1-216-295-00	METAL GLAZE 0 5%	1/10W
R633	1-249-388-11	CARBON 3.9 5%	1/4W F
R634	1-249-377-11	CARBON 0.47 5%	1/4W F
R636	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R637	1-247-811-31	CARBON 150 5%	1/4W F

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R640	1-216-043-00	METAL GLAZE 560 5%	1/10W
R641	1-216-295-00	METAL GLAZE 0 5%	1/10W
R642	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R643	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R645	1-212-855-61	FUSIBLE 8.2 5%	1/4W F
R647	1-216-425-11	METAL OXIDE 56 5%	1W F
R648	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R649	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R650	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R651	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R652	1-249-411-11	CARBON 330 5%	1/4W F
R653	1-249-377-11	CARBON 0.47 5%	1/4W F
R655	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R656	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R658	1-216-029-00	METAL GLAZE 150 5%	1/10W
R659	1-216-029-00	METAL GLAZE 150 5%	1/10W
R660	1-216-045-00	METAL GLAZE 680 5%	1/10W
R661	1-215-864-00	METAL OXIDE 150 5%	1W F
R662	1-216-043-00	METAL GLAZE 560 5%	1/10W
R670	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R671	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R672	1-215-924-00	METAL OXIDE 15K 5%	3W F
R673	1-215-924-00	METAL OXIDE 15K 5%	3W F
R674	1-215-924-00	METAL OXIDE 15K 5%	3W F
R675	1-215-924-00	METAL OXIDE 15K 5%	3W F
R700	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R701	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R801	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R803	1-215-922-11	METAL OXIDE 6.8K 5%	3W F
R805	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R806	1-216-451-11	METAL OXIDE 120 5%	2W F
R807	1-215-881-11	METAL OXIDE 15 5%	2W F
R810	1-216-198-91	METAL GLAZE 1K 5%	1/8W
R813	1-215-893-11	METAL OXIDE 1.5K 5%	2W F
R814	1-216-483-11	METAL OXIDE 2.7K 5%	3W F
R815	1-216-483-11	METAL OXIDE 2.7K 5%	3W F
R823	1-215-868-00	METAL OXIDE 680 5%	1W F
R831	1-216-428-00	METAL OXIDE 180 5%	1W F
R833	1-212-865-61	FUSIBLE 22 5%	1/4W F
R851	1-249-382-11	CARBON 1.2 5%	1/4W F
R852	1-215-869-11	METAL OXIDE 1K 5%	1W F
R853	1-216-398-11	METAL OXIDE 5.6 5%	3W F
R854	1-249-377-11	CARBON 0.47 5%	1/4W F
R855	1-249-492-11	CARBON 47K 5%	1/2W F
R856	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R857	1-214-919-00	METAL 180K 1%	1/2W
R858	1-216-363-00	METAL OXIDE 0.33 5%	2W F
R859	1-247-758-11	CARBON 3.3K 5%	1/2W F
R860	1-216-101-00	METAL GLAZE 150K 5%	1/10W
R862	1-216-097-00	METAL GLAZE 100K 5%	1/10W
R863	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R864	1-216-109-00	METAL GLAZE 330K 5%	1/10W
R865	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R866	1-216-428-00	METAL OXIDE 180 5%	1W F
R867	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R868	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R869	1-216-248-00	METAL GLAZE 120K 5%	1/8W
R870	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R880	1-216-429-00	METAL OXIDE 270 5%	1W F
R901	1-244-945-91	CARBON 1M 5%	1/2W
R902	1-218-265-21	METAL GLAZE 8.2M 5%	1W F
R903	1-205-909-11	WIREWOUND 3.3 5%	10W F
R907	1-214-927-00	CARBON 390K 5%	1/2W
R1410	1-216-073-00	METAL GLAZE 10K 5%	1/10W

D2

REF. NO.	PART NO.	DESCRIPTION	REMARK
R1411	1-216-133-00	METAL GLAZE 3.3M 5%	1/10W
R1414	1-216-115-00	METAL GLAZE 560K 5%	1/10W
R1416	1-216-017-00	METAL GLAZE 47 5%	1/10W
R1417	1-216-017-00	METAL GLAZE 47 5%	1/10W
R1418	1-216-017-00	METAL GLAZE 47 5%	1/10W
R1421	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1422	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1423	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R1424	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R1425	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R1426	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R1427	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R1428	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R1429	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R1430	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R1453	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R1457	1-216-033-00	METAL GLAZE 220 5%	1/10W
R1458	1-216-033-00	METAL GLAZE 220 5%	1/10W
R1459	1-216-033-00	METAL GLAZE 220 5%	1/10W
R1461	1-216-033-00	METAL GLAZE 220 5%	1/10W
R1462	1-216-033-00	METAL GLAZE 220 5%	

D2

The components identified by
shading and mark Δ are critical
for safety.
Replace only with part number
specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
<THERMISTOR>			
THP501	1-800-200-00	THERMISTOR 5-3K	
THP901	Δ 1-806-165-12	THERMISTOR (POSITIVE)	
<VARISTOR>			
VDR601	1-810-052-21	VARISTOR	
VDR602	1-810-052-21	VARISTOR	
<CRYSTAL>			
X301	1-577-611-11	OSCILLATOR, CERAMIC	
X443	1-567-504-11	OSCILLATOR, CRYSTAL	
<MODULE>			
YCM301	1-235-833-11	YC MODULE	

MISCELLANEOUS			

Δ 1-426-145-21	COIL, DEGAUSSING		
Δ 1-451-249-31	DEFLECTION YOKE Y14NDA2		
1-452-277-00	MAGNET, BMC		
1-504-465-11	SPEAKER (8CM)		
Δ 1-765-286-11	CORD, POWER 2.5A/250V		
V901	Δ 8-735-555-05	PICTURE TUBE (A34JBU10X)	

ACCESSORIES AND PACKING MATERIALS			

3-757-672-11	MANUAL, INSTRUCTION (KV-V1410D)		
	(ENGLISH/FRENCH/		
	GERMAN/ITALIAN)		
3-757-672-41	MANUAL, INSTRUCTION (KV-V1410E)		
	(DUTCH/FRENCH/GERMAN/		
	PORTUGUESE/SPANISH)		
3-757-672-51	MANUAL, INSTRUCTION (SPANISH)		
	(KV-V1410E)		
3-757-672-61	MANUAL, INSTRUCTION (ITALIAN)		
	(KV-V1410A)		
*4-043-948-01	CUSHION (UPPER) (ASSY)		
*4-043-949-01	CUSHION (LOWER) (ASSY)		
*4-043-950-01	INDIVIDUAL CARTON		
*4-380-340-01	BAG, PROTECTION		
REMOTE COMMANDER			
1-467-435-11	REMOTE COMMANDER (RM-846)		
9-907-032-01	COVER, BATTERY (FOR RM-846)		
9-907-033-01	COVER (FOR RM-846)		

EXPLODED VIEWS and ELECTRICAL PARTS LIST
of VIDEO section

EXPLODED VIEWS (VIDEO SECTION)

NOTE:

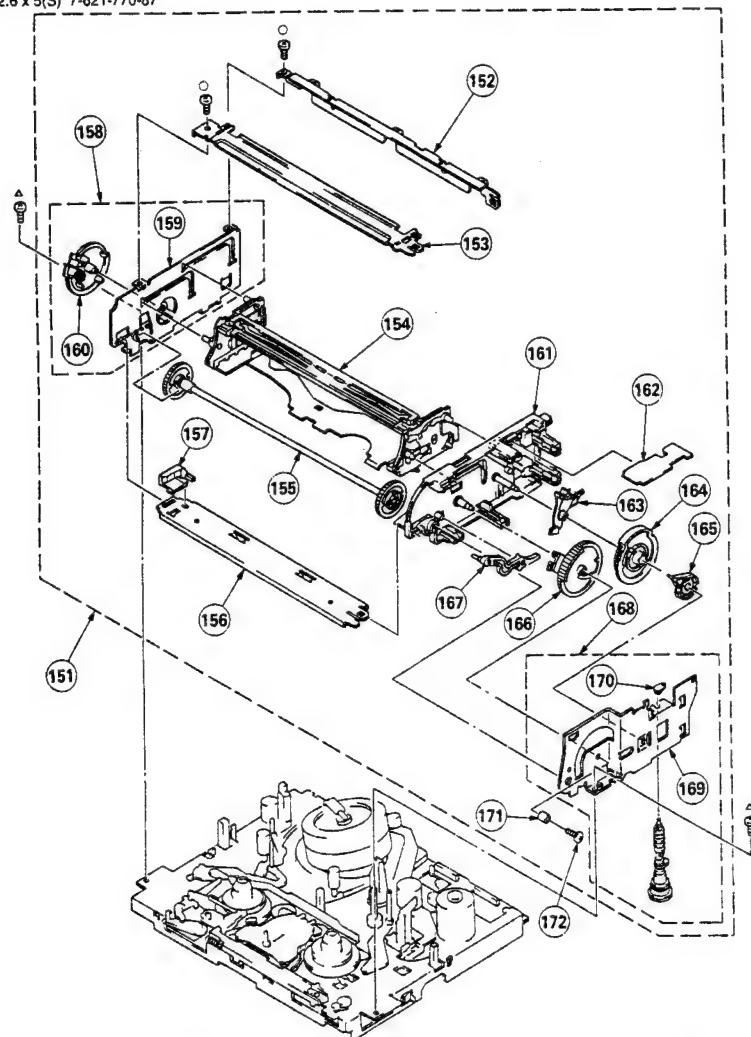
* Items with no part number and no description are not stocked because they are seldom required for routine service.

* The construction parts of an assembled part are indicated with a collation number in the remark column.

* Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

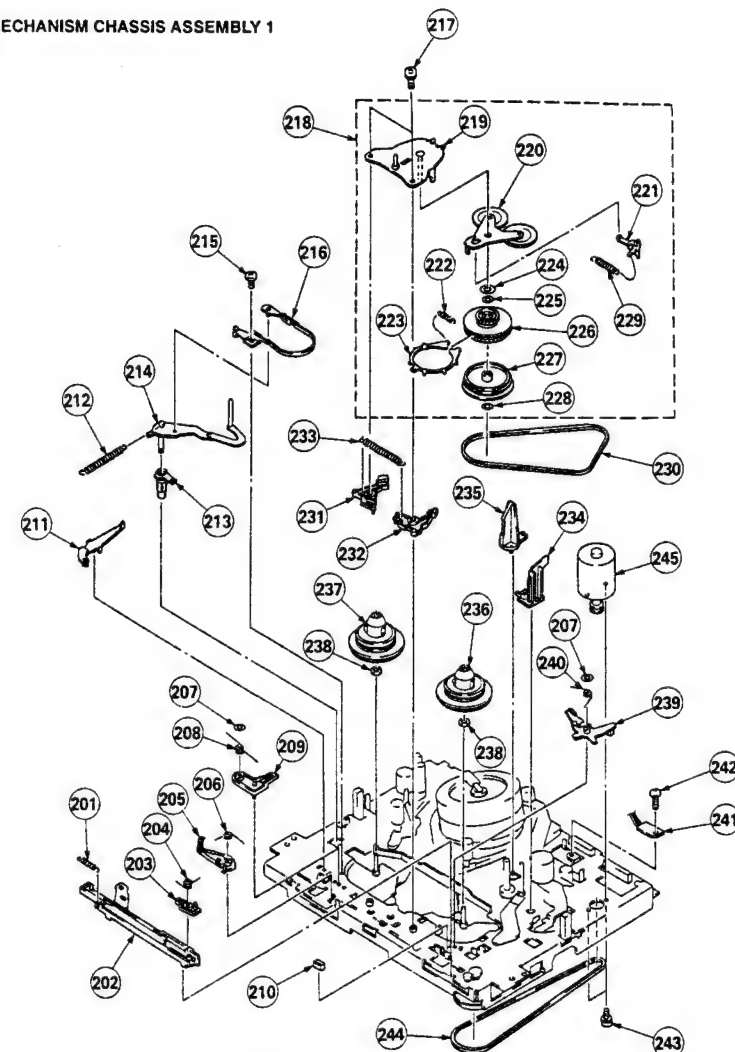
6-1. HL CASSETTE COMPARTMENT ASSEMBLY

○: PTT 2.6 x 4(S) 7-621-773-86
△: PTT 2.6 x 5(S) 7-621-770-87



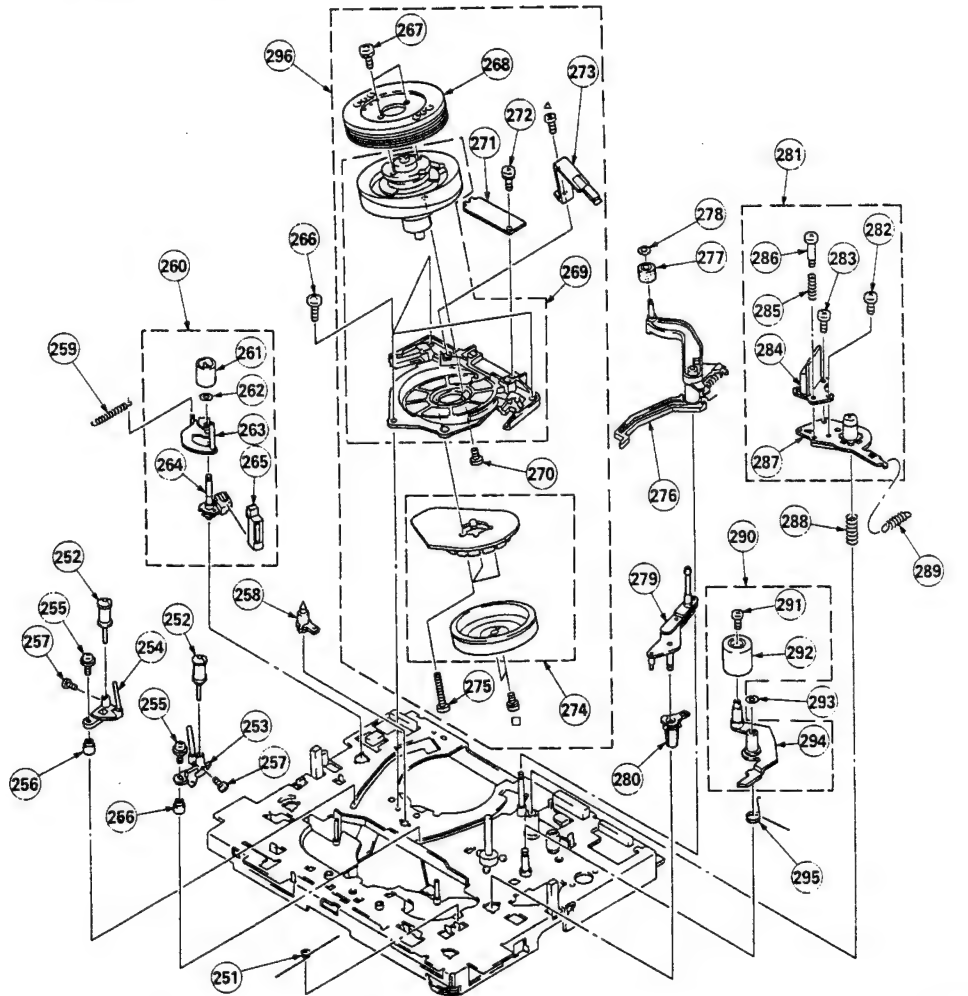
REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
151	3-946-965-01	PL ASST		159	3-947-009-01	RYETING, FRAME (L)		167	3-947-012-01	LEVER ASSY, LIFT	
152	3-947-008-01	ANGLE, REAR		160	3-947-010-01	GEAR (L) ASST, LIFT		168	3-946-990-01	COVER ASSY, FRAME	
153	3-946-995-01	PLATE, UPPER		161	3-947-011-01	FRAME (R)		169	3-947-013-01	COVER, FRAME	
154	3-946-979-01	HOLDER ASSY, CASSETTE		162	3-946-992-01	PMB (R) ASST, PL		170	3-947-020-01	BEARING (A), F WORN	
155	3-946-983-01	GEAR ASSY, SYNCHRO		163	3-946-991-01	LEVER ASSY, SWITCH		171	3-946-705-01	COLLAR	
156	3-946-993-01	ANGLE, FRONT		164	3-946-980-01	WHEEL ASSY, WORN		172	3-948-706-01	SCREW (3X6)	
157	3-946-994-01	GUIDE (L), CASSETTE		165	3-946-981-01	ARM ASSY, SWITCH					
158	3-946-978-01	FRAME (L) ASST		166	3-946-982-01	GEAR (R) ASST, LIFT					

6-2. MECHANISM CHASSIS ASSEMBLY 1



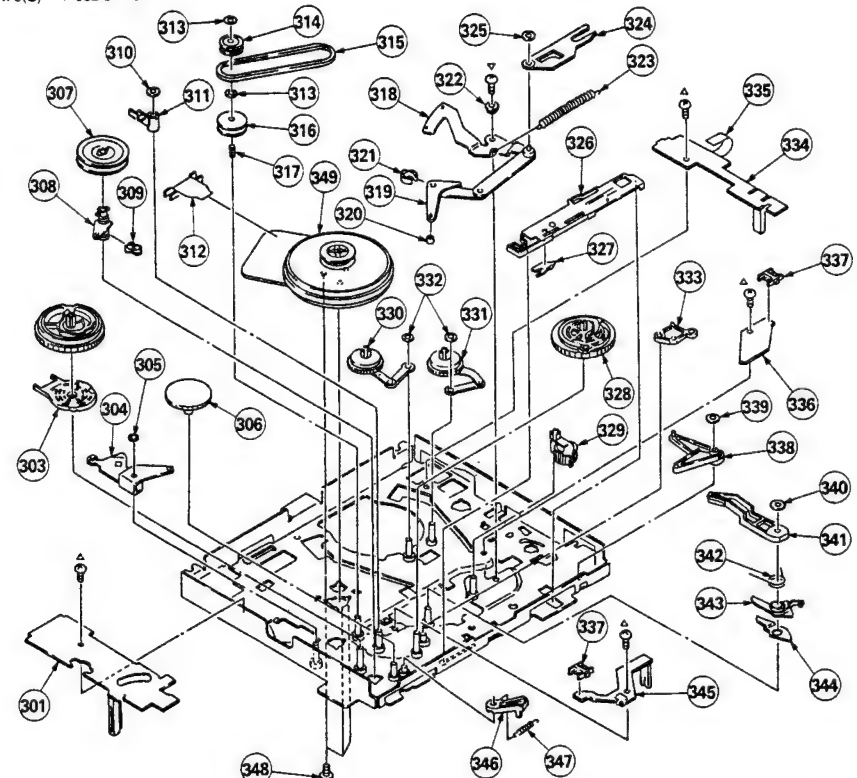
REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
201	3-947-015-01	SPRING, BK SLIDE		216	3-946-935-01	BAND ASSY, BT		231	3-947-017-01	ARM (L) ASST, BRAKE	
202	3-947-001-01	PLATE, SLIDE, BK		217	3-947-000-01	SCREW (2X4)		232	3-947-018-01	ARM (R) ASST, BRAKE	
203	3-947-014-01	HOOK, RE TRIGGER		218	3-951-990-01	PLATE ASSY, SUB		233	3-947-019-01	SPRING, BRAKE ARM	
204	3-947-016-01	SPRING, TRIGGER HOOK		219	3-952-168-01	RYETING, SUB PLATE		234	3-947-069-01	GUIDE BLOCK	
205	3-946-959-01	ARM, REC		220	3-946-988-01	PLATE ASSY, GEAR		235	3-947-068-01	GUIDE ASSY, TAPE	
206	3-946-947-01	SPRING, REC ARM		221	3-946-987-01	ARM, CENTER RING		236	3-947-002-01	TABLE ASSY, REEL	
207	3-946-916-01	CUT (3X6X0.5), NLW		222	3-946-986-01	SPRING, CHANGE RING		237	3-947-997-01	TABLE ASSY, S REEL	
208	3-946-915-01	SPRING, SS ARM		223	3-946-985-01	RING, CHANGE		238	3-947-003-01	WASHER (2.5X4.5X0.5)	
209	3-946-914-01	ARM, SS BRAKE		224	3-946-989-01	NL (M) (C) (6.4X0X0.3)		239	3-946-912-01	ARM ASSY, TS BRAKE	
210	3-947-067-01	RUBBER, DAMPER		225	3-946-997-01	NL (M) (2.5X1.5X0.25)		240	3-946-913-01	SPRING, TS ARM	
211	3-946-946-01	ARM, REC SWITCH		226	3-951-991-01	CLUTCH ASSY		241	3-947-626-01	SENSOR (EYR-510R)	
212	3-946-937-01	SPRING, BT		227	3-946-984-01	PULLEY ASSY, CLUTCH		242	3-947-996-01	SCREW (1.55X4.5X0.3)	
213	3-946-936-01	METAL, BT ARM		228	3-946-996-01	CUT (2.1X10.3), P.V.		243	3-946-918-01	SCREW (3X4)	
214	3-946-934-01	ARM ASSY, TENSION		229	3-947-998-01	SPRING, CENTER RING ARM		244	3-946-923-01	BELT, LOADING	
215	3-946-966-01	SCREW (2.6X5), *C TIGHT		230	3-946-999-01	BELT, DRIVE		245	3-946-917-01	MOTOR ASSY, L	

6-3. MECHANISM CHASSIS ASSEMBLY 2

▲: PTT 2.6 x 5(S) 7-621-770-87
□: PS 2.6 x 5 7-628-254-05

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
251	3-947-022-01	SPRING, BG ARM		267	3-947-060-01	SCREW (3.2X8)	
252	3-947-073-01	POST, ROLLER		268	3-949-187-01	DRUM (TPB3-011), UPPER	
253	3-947-072-01	L BLOCK (R) ASSY		269	3-947-046-01	CYLINDER (ROUND)	
254	3-947-071-01	L BLOCK (L) ASSY		270	3-947-061-01	SCREW (2.6X6), CAMERA B TIGHT	
255	3-947-078-01	SCREW (2.6X3), + CUP		271	3-947-047-01	PC BOARD ASSY, VIDEO OUT	
256	3-947-077-01	MOSS, LOADING		272	3-947-064-01	SCREW (2.6X6), S TIGHT	
257	3-947-074-01	SCREW (2.6X3)		273	3-947-999-01	GROUND ASSY, DRUM	
258	3-947-070-01	MOSS, CASSETTE GUIDE		274	3-947-043-01	MOTOR (E20EL) DRUM	
259	3-948-474-01	SPRING, P POST		275	3-947-065-01	SCREW (2.6X6)	
260	3-946-972-01	FE (BASE) ASSY		276	3-947-080-01	LEVER ASSY, CLEANING	
261	3-946-975-01	ROLLER, IMPEDANCE		277	3-947-624-01	ROLLER, CLEANING	
262	3-946-977-01	CUT (1.6X3, BAO. 3), W		278	3-947-625-01	CUT (2.1X50.3), POLY-SLIDER(W)	
263	3-946-976-01	ARM ASSY, P POST		279	3-947-021-01	ARM ASSY, BG	
264	3-946-974-01	HEAD (BYFRC0003), FE		280	3-946-936-01	METAL, BT ARM	
265	3-946-973-01	HEAD (BYF13001), FE		281	3-947-081-01	ARM (BASE) ASSY	
266	3-947-066-01	SCREW (3.2X7), + C TIGHT		282	3-946-929-01	SCREW (2.6X8), PAN	

6-4. MECHANISM CHASSIS ASSEMBLY 3

▲: PTT 2.6 x 5(S) 7-621-770-87
▽: PTT 3 x 6(S) 7-682-547-04

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
301	3-946-954-01	PWB ASSY, BASE		326	3-946-943-01	PLATE, SLIDE, M	
303	3-946-958-01	SWITCH, MODE		327	3-946-944-01	LEVER	
304	3-947-026-01	PLATE ASSY		328	3-946-925-01	GEAR, L CAM	
305	3-947-027-01	CUT (3X6X0.5), POLY-SLIDER (W)		329	3-946-998-01	ARM ASSY, RF GEAR	
306	3-946-922-01	GEAR, LOADING		330	3-947-075-01	GEAR (L) ASSY, T THREADING	
307	3-946-921-01	PULLEY, LOADING		331	3-947-076-01	GEAR (R) ASSY, T THREADING	
308	3-946-919-01	METAL ASSY, L PULLEY		332	3-947-079-01	HL (C) (4.7X7X0.5)	
309	3-946-920-01	ARM ASSY, TRG GEAR		333	3-946-942-01	LEVER, M	
310	3-946-964-01	CUT (2.1X5X0.5)		334	3-946-957-01	PWB ASSY, DN	
311	3-946-961-01	ARM, BREAKER		335	3-946-949-01	LEAD (EPC) (BNCD-6-63), DN	
312	3-947-029-01	LEAD ASSY, CM		336	3-946-956-01	PWB ASSY, S SENSOR	
313	3-946-963-01	CUT (2.1X4X0.4)		337	3-946-948-01	JOINER (HCN40011), PWB	
314	3-946-950-01	PULLEY ASSY, RE		338	3-946-938-01	LEVER, BT	
315	3-946-962-01	BELT, FL		339	3-946-968-01	CUT (3X7.5X0.5), HLW	
316	3-946-951-01	PULLEY, EJECT		340	3-947-035-01	CUT (2.6X6X0.5)	
317	3-946-960-01	SPRING, BREAKER		341	3-947-033-01	LEVER, CB RETURN	
318	3-946-926-01	RVETING, L JOINT PLATE		342	3-947-031-01	SPRING, C BRAKE	
319	3-946-952-01	STOPPER, GEAR PLATE		343	3-947-032-01	LEVER, C BRAKE	
320	3-946-941-01	ROLLER, CAM		344	3-947-030-01	ARM ASSY, C BRAKE	
321	3-946-945-01	STOPPER, L LEVER		345	3-946-955-01	PWB ASSY, T SENSOR	
322	3-946-940-01	COLLAR, L GEAR PLATE		346	3-946-910-01	ARM, BK RELEASE	
323	3-946-927-01	SPRING, L GR PLATE		347	3-946-911-01	SPRING, RESET	
324	3-946-939-01	PLATE, UP, BT PULL		348	3-947-034-01	SCREW (2.6X7), + C TIGHT	
325	3-946-967-01	CUT (2.1X4X0.5)		349	3-947-028-01	MOTOR (F2QXB38)	


SECTION 7

ELECTRICAL PARTS LIST (VIDEO SECTION)

MF1

MF3

NOTE:

The components identified by shading and mark  are critical for safety.
Replace only with part number specified.

• Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

RESISTORS
• All resistors are in ohms
• F : nonflammable

When indicating parts by reference number, please include the board name.

CAPACITORS COILS
• MF : μ F, PF : μ PF • MMH : mH, UH : μ H

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1301-920-A MF1 BOARD, COMPLETE *****				R108	1-249-418-11	CARBON 1.2K 5% 1/4W	
<CAPACITOR>				R109	1-249-420-11	CARBON 1.8K 5% 1/4W	
C103	1-101-003-00	CERAMIC 0.0047MF	50V	R110	1-249-423-11	CARBON 3.3K 5% 1/4W	
C107	1-102-074-00	CERAMIC 0.001MF	10% 50V	R111	1-249-428-11	CARBON 8.2K 5% 1/4W	
<CONNECTOR>				R112	1-249-415-11	CARBON 680 5% 1/4W	
CN101	1-695-380-21	PIN, CONNECTOR (PC BOARD) 19P		R113	1-249-418-11	CARBON 1.2K 5% 1/4W	
CN102	1-695-368-21	PIN, CONNECTOR (PC BOARD) 7P		R114	1-249-420-11	CARBON 1.8K 5% 1/4W	
<DIODE>				R115	1-249-423-11	CARBON 3.3K 5% 1/4W	
D101	8-719-028-30	DIODE SPR-39MYWF		R116	1-249-428-11	CARBON 8.2K 5% 1/4W	
D102	8-719-992-26	DIODE SLR-305DC3F		R118	1-249-421-11	CARBON 2.2K 5% 1/4W	
D103	8-719-992-24	DIODE SLR-305VC3F		R119	1-249-406-11	CARBON 120 5% 1/4W	
D104	8-719-992-24	DIODE SLR-305VC3F		R120	1-249-418-11	CARBON 1.2K 5% 1/4W	
D105	8-719-992-24	DIODE SLR-305VC3F		R121	1-249-418-11	CARBON 1.2K 5% 1/4W	
D109	8-719-921-54	DIODE MTJZ-6.28		<SWITCH>			
D110	8-719-921-54	DIODE MTJZ-6.28		S101	1-572-200-11	SWITCH, KEYBOARD	
D111	8-719-921-54	DIODE MTJZ-6.28		S102	1-572-200-11	SWITCH, KEYBOARD	
D112	8-719-921-54	DIODE MTJZ-6.28		S103	1-572-200-11	SWITCH, KEYBOARD	
D113	8-719-921-54	DIODE MTJZ-6.28		S104	1-572-200-11	SWITCH, KEYBOARD	
D113	8-719-921-54	DIODE MTJZ-6.28		S105	1-572-200-11	SWITCH, KEYBOARD	
D116	8-719-921-54	DIODE MTJZ-6.28		S106	1-572-908-11	SWITCH, SLIDE	
D302	8-719-109-93	DIODE RD6.2ESB2		S107	1-572-200-11	SWITCH, KEYBOARD	
<IC>				S108	1-572-200-11	SWITCH, KEYBOARD	
IC101	1-466-833-11	RAY-CATCHER BLOCK, REMOCON		S109	1-572-200-11	SWITCH, KEYBOARD	
<JACK>				S110	1-572-200-11	SWITCH, KEYBOARD	
J101	1-691-293-21	JACK		S111	1-572-200-11	SWITCH, KEYBOARD	
J102	1-695-451-11	JACK, PIN 2P		S112	1-572-200-11	SWITCH, KEYBOARD	
<COIL>				S113	1-572-907-11	SWITCH, SLIDE	
L101	1-410-509-11	INDUCTOR 100H		S114	1-554-118-00	SWITCH, PUSH (1 KEY)	
L103	1-410-509-11	INDUCTOR 100H		*****			
L105	1-410-316-11	INDUCTOR 10H		*1-650-173-11 MF3 BOARD *****			
<RESISTOR>				<CONNECTOR>			
R101	1-247-807-31	CARBON 100 5% 1/4W		CN301	1-506-488-11	PIN, CONNECTOR 9P	
R102	1-247-807-31	CARBON 100 5% 1/4W		<DIODE>			
R103	1-247-807-31	CARBON 100 5% 1/4W		D301	8-719-992-26	DIODE SLR-305DC3F	
R104	1-247-807-31	CARBON 100 5% 1/4W		<SWITCH>			
R105	1-247-804-11	CARBON 75 5% 1/4W		S301	1-572-662-61	SWITCH, ROTARY	
R107	1-249-415-11	CARBON 680 5% 1/4W		S302	1-572-200-11	SWITCH, KEYBOARD	
*****				*****			

REF.NO.	PART NO.	DESCRIPTION	REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
*A-1306-446-A MA2 BOARD, COMPLETE *****				C406	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
<CAPACITOR>				C407	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C001	1-163-243-11	CERAMIC CHIP 47PF	5% 50V	C408	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C002	1-163-141-00	CERAMIC CHIP 0.001MF	5% 10V	C409	1-124-925-11	ELECT 2.2MF	20% 50V
C003	1-124-126-00	ELECT 47MF	20% 10V	C410	1-124-903-11	ELECT 1MF	20% 50V
C004	1-163-243-11	CERAMIC CHIP 47PF	5% 50V	C411	1-124-903-11	ELECT 1MF	20% 50V
C006	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C412	1-163-833-00	CERAMIC CHIP 0.068MF	25V
C008	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C413	1-126-101-11	ELECT 100MF	20% 16V
C009	1-163-243-11	CERAMIC CHIP 47PF	5% 50V	C414	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C010	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C415	1-124-477-11	ELECT 47MF	20% 16V
C015	1-163-095-00	CERAMIC CHIP 12PF	5% 50V	C416	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C019	1-124-907-11	ELECT 10MF	20% 50V	C417	1-126-233-11	ELECT 22MF	20% 25V
C020	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C418	1-126-103-11	ELECT 470MF	20% 16V
C021	1-124-443-00	ELECT 100MF	20% 10V	C420	1-163-005-11	CERAMIC CHIP 470PF	10% 50V
C103	1-124-499-11	ELECT 1MF	20% 50V	C422	1-124-477-11	ELECT 47MF	20% 16V
C104	1-126-233-11	ELECT 22MF	20% 25V	C423	1-124-925-11	ELECT 2.2MF	20% 50V
C105	1-164-161-11	CERAMIC CHIP 0.0022MF	10% 50V	C425	1-163-141-00	CERAMIC CHIP 0.001MF	5% 50V
C106	1-126-103-11	ELECT 470MF	20% 16V	C440	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C110	1-124-907-11	ELECT 10MF	20% 50V	C501	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C113	1-124-120-11	ELECT 220MF	20% 16V	C502	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C114	1-124-126-00	ELECT 47MF	20% 10V	C503	1-124-126-00	ELECT 47MF	20% 10V
C115	1-124-907-11	ELECT 10MF	20% 50V	C505	1-164-344-11	CERAMIC CHIP 0.068MF	10% 25V
C117	1-124-907-11	ELECT 10MF	20% 50V	C506	1-124-927-11	ELECT 4.7MF	20% 50V
C202	1-124-477-11	ELECT 47MF	20% 16V	C507	1-126-233-11	ELECT 22MF	20% 25V
C203	1-124-477-11	ELECT 47MF	20% 16V	C508	1-124-907-11	ELECT 10MF	20% 50V
C204	1-124-477-11	ELECT 47MF	20% 16V	C509	1-124-443-00	ELECT 100MF	20% 6.3V
C205	1-124-477-11	ELECT 47MF	20% 16V	C510	1-164-182-11	CERAMIC CHIP 0.0033MF	10% 50V
C206	1-124-477-11	ELECT 47MF	20% 16V	C511	1-124-126-00	ELECT 47MF	20% 10V
C207	1-124-477-11	ELECT 47MF	20% 16V	C512	1-163-017-00	CERAMIC CHIP 0.0047MF	10% 50V
C208	1-124-477-11	ELECT 47MF	20% 16V	C513	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V
C209	1-124-477-11	ELECT 47MF	20% 16V	C514	1-124-925-11	ELECT 2.2MF	20% 50V
C212	1-124-477-11	ELECT 47MF	20% 16V	C516	1-164-344-11	CERAMIC CHIP 0.068MF	10% 25V
C213	1-124-477-11	ELECT 47MF	20% 16V	C517	1-124-927-11	ELECT 4.7MF	20% 50V
C215	1-124-477-11	ELECT 47MF	20% 16V	C518	1-130-487-00	MYLAR 0.022MF	5% 50V
C217	1-124-903-11	ELECT 1MF	20% 50V	C519	1-130-487-00	MYLAR 0.022MF	5% 50V
C218	1-124-903-11	ELECT 1MF	20% 50V	C520	1-124-925-11	ELECT 2.2MF	20% 50V
C219	1-124-477-11	ELECT 47MF	20% 16V	C521	1-126-233-11	ELECT 22MF	20% 25V
C302	1-163-009-11	CERAMIC CHIP 0.001MF	10% 50V	C522	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C303	1-124-477-11	ELECT 47MF	20% 16V	C523	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C304	1-124-902-00	ELECT 0.47MF	20% 50V	C524	1-124-443-00	ELECT 100MF	20% 6.3V
C305	1-124-927-11	ELECT 4.7MF	20% 50V	C525	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
C306	1-104-792-51	ELECT 33MF	20% 16V	C526	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C307	1-130-483-00	MYLAR 0.01MF	5% 50V	C527	1-124-903-11	ELECT 1MF	20% 50V
C308	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C528	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C310	1-124-903-11	ELECT 1MF	20% 50V	C529	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C311	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C530	1-163-099-00	CERAMIC CHIP 18PF	5% 50V
C312	1-163-022-00	CERAMIC CHIP 0.012MF	10% 50V	C531	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C313	1-124-903-11	ELECT 1MF	20% 50V	C532	1-124-907-11	ELECT 10MF	20% 50V
C314	1-124-907-11	ELECT 10MF	20% 50V	C533	1-126-233-11	ELECT 22MF	20% 25V
C316	1-126-962-11	ELECT 3.3MF	20% 50V	C534	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V
C317	1-130-012-00	FLIM 330PF	5% 50V	C536	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C318	1-124-477-11	ELECT 47MF	20% 16V	C537	1-126-101-11	ELECT 100MF	20% 16V
C319	1-163-011-11	CERAMIC CHIP 0.0015MF	10% 50V	C538	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C320	1-137-350-11	FLIM 0.015MF	5% 100V	C539	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C321	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V	C540	1-163-117-00	CERAMIC CHIP 100PF	5% 50V
C322	1-163-038-00	CERAMIC CHIP 0.1MF	25V	C541	1-124-907-11	ELECT 10MF	20% 50V
C323	1-163-137-00	CERAMIC CHIP 680PF	5% 50V	C542	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C401	1-124-477-11	ELECT 47MF	20% 16V	C543	1-163-059-00	CERAMIC CHIP 0.01MF	50V
C402	1-126-926-11	ELECT 1000MF	20% 10V	C546	1-124-907-11	ELECT 10MF	20% 50V
C404	1-163-117-00	CERAMIC CHIP 100PF	5% 50V	C547	1-163-001-11	CERAMIC CHIP 220PF	10% 50V
C405	1-163-001-11	CERAMIC CHIP 220PF	10% 50V	C702	1-163-245-11	CERAMIC CHIP 56PF	5% 50V
*****				C704	1-164-232-11	CERAMIC CHIP 0.01MF	10% 50V
*****				C705	1-163-038-00	CERAMIC CHIP 0.1MF	25V

MA2

MA2

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
C707	1-124-443-00	ELECT 100MF 20%	10V	D412	8-719-901-33	DIODE 1SS133	
C708	1-126-103-11	ELECT 470MF 20%	16V	D413	8-719-901-33	DIODE 1SS133	
C709	1-163-031-11	CERAMIC CHIP 0.01MF	50V	D415	8-719-108-12	DIODE RD9.1EW	
C710	1-125-710-11	CAP. DOUBLE LAYER 0.10F		D416	8-719-921-69	DIODE MTZJ-9.1	
C711	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D417	8-719-921-69	DIODE MTZJ-9.1	
C714	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D418	8-719-921-69	DIODE MTZJ-9.1	
C715	1-163-038-00	CERAMIC CHIP 0.1MF	25V	D419	8-719-108-12	DIODE RD9.1EW	
				D421	8-719-921-69	DIODE MTZJ-9.1	
<FILTER>				D423	8-719-901-33	DIODE 1SS133	
CF001	1-577-101-11	VIBRATOR, CERAMIC		D424	8-719-901-33	DIODE 1SS133	
CF702	1-577-101-11	VIBRATOR, CERAMIC		D425	8-719-901-33	DIODE 1SS133	
				D426	8-719-901-33	DIODE 1SS133	
				D427	8-719-901-33	DIODE 1SS133	
<CONNECTOR>				D501	8-719-109-85	DIODE RD5.1ESB2	
CN001	1-695-380-21	PIN, CONNECTOR (PC BOARD) 19P		D502	8-719-901-33	DIODE 1SS133	
CN002	1-506-488-11	PIN, CONNECTOR 9P		D503	8-719-901-33	DIODE 1SS133	
CN003	1-563-602-11	CONNECTOR, FLEXIBLE 25P		D701	8-719-921-54	DIODE MTZJ-6.28	
CN004	*1-573-843-11	CONNECTOR, BOARD TO BOARD 11P		D704	8-719-901-33	DIODE 1SS133	
CN101	1-695-915-11	TAB (CONTACT)		D705	8-719-901-33	DIODE 1SS133	
CN201	*1-564-512-11	PLUG, CONNECTOR 9P		<FERRITE BEAD>			
CN301	*1-560-891-00	PIN, CONNECTOR 3P		FB001	1-410-396-41	FERRITE BEAD INDUCTOR	
CN302	*1-560-892-00	PIN, CONNECTOR 4P		FB002	1-410-396-41	FERRITE BEAD INDUCTOR	
CN303	*1-564-521-11	PLUG, CONNECTOR 6P					
CN401	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P		<IC>			
CN402	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P		IC001	8-752-847-26	IC CXP85340A-SV4714	
CN403	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P		IC002	8-759-191-69	IC CAT24C08P	
CN404	1-695-350-11	PIN, CONNECTOR (PC BOARD) 27P		IC201	8-759-927-56	IC BA7021	
CN502	*1-568-787-11	PIN, CONNECTOR 10P		IC202	8-759-056-91	IC BA7611AN	
CN503	*1-560-891-00	PIN, CONNECTOR 3P		IC203	8-759-932-69	IC BU40538CF-T2	
				IC204	8-759-945-48	IC BA7001	
<TRIMMER>				IC301	8-759-089-82	IC BA7790LS	
CT701	1-141-227-00	CAP. TRIMMER		IC501	8-752-850-55	IC CXP80724-082Q	
				IC502	8-759-246-14	IC TA8823N	
				IC503	8-759-503-91	IC TL082ACP	
<DIODE>				IC504	8-759-822-09	IC LB1641	
D001	8-719-200-82	DIODE 11ES2		IC505	8-759-983-74	IC LM324NS	
D002	8-719-921-54	DIODE MTZJ-6.28		IC506	8-759-745-64	IC LM4560M	
D003	8-719-921-54	DIODE MTZJ-6.28		IC507	8-759-983-69	IC LM358PS	
D004	8-719-901-33	DIODE 1SS133		IC701	8-759-192-06	IC MB89121-162	
D005	8-719-921-54	DIODE MTZJ-6.28		IC702	8-759-515-58	IC PST572H	
D008	8-719-921-54	DIODE MTZJ-6.28		IC703	8-759-510-43	IC PST572C	
D009	8-719-921-54	DIODE MTZJ-6.28					
D011	8-719-921-54	DIODE MTZJ-6.28		<JACK>			
D012	8-719-921-54	DIODE MTZJ-6.28		J401	1-695-935-11	CONNECTOR (SQUARE TYPE) 21P	
D014	8-719-921-54	DIODE MTZJ-6.28					
D015	8-719-921-54	DIODE MTZJ-6.28		<COIL>			
D016	8-719-921-54	DIODE MTZJ-6.28		L001	1-408-413-00	INDUCTOR 22UH	
D017	8-719-921-54	DIODE MTZJ-6.28		L002	1-414-194-11	INDUCTOR 33UH	
D018	8-719-921-54	DIODE MTZJ-6.28		L003	1-414-194-11	INDUCTOR 33UH	
D019	8-719-921-54	DIODE MTZJ-6.28		L004	1-414-194-11	INDUCTOR 33UH	
D020	8-719-921-54	DIODE MTZJ-6.28		L005	1-414-194-11	INDUCTOR 33UH	
D021	8-719-921-54	DIODE MTZJ-6.28		L006	1-414-146-31	INDUCTOR 2.2UH	
D101	8-719-901-33	DIODE 1SS133		L030	1-414-146-31	INDUCTOR 2.2UH	
D102	8-719-109-84	DIODE RD5.1ESB1		L102	1-410-680-31	INDUCTOR 330UH	
D103	8-719-982-26	DIODE MTZJ-33B		L103	1-410-645-31	INDUCTOR 100UH	
D104	8-719-921-69	DIODE MTZJ-9.1		L104	1-410-645-31	INDUCTOR 100UH	
D301	8-719-901-33	DIODE 1SS133		L201	1-410-521-11	INDUCTOR 100UH	
D302	8-719-901-33	DIODE 1SS133		L301	1-410-521-11	INDUCTOR 100UH	
D303	8-719-901-33	DIODE 1SS133					
D402	8-719-921-69	DIODE MTZJ-9.1					
D410	8-719-921-69	DIODE MTZJ-9.1					
D411	8-719-901-33	DIODE 1SS133					

The components identified by shading and mark Δ are critical for safety.
Replace only with part number specified.


MA2

REF. NO.	PART NO.	DESCRIPTION	REMARK	REF. NO.	PART NO.	DESCRIPTION	REMARK
L302	1-410-071-11	INDUCTOR 10MMH		JR019	1-216-296-91	METAL GLAZE 0 5%	1/8W
L303	1-410-687-11	INDUCTOR 1.2MMH		JR020	1-216-296-91	METAL GLAZE 0 5%	1/8W
L401	1-408-421-00	INDUCTOR 100UH		JR021	1-216-296-91	METAL GLAZE 0 5%	1/8W
L402	1-408-421-00	INDUCTOR 100UH		JR022	1-216-296-91	METAL GLAZE 0 5%	1/8W
L403	1-410-470-11	INDUCTOR 10UH		JR024	1-216-295-00	METAL GLAZE 0 5%	1/10W
L501	1-408-413-00	INDUCTOR 22UH		JR025	1-216-296-91	METAL GLAZE 0 5%	1/8W
L502	1-410-645-31	INDUCTOR 100UH		JR026	1-216-296-91	METAL GLAZE 0 5%	1/8W
L503	1-414-146-31	INDUCTOR 2.2UH		JR027	1-216-296-91	METAL GLAZE 0 5%	1/8W
L702	1-414-146-31	INDUCTOR 2.2UH		JR029	1-216-296-91	METAL GLAZE 0 5%	1/8W
L720	1-414-146-31	INDUCTOR 2.2UH		JR030	1-216-296-91	METAL GLAZE 0 5%	1/8W
				JR031	1-216-295-00	METAL GLAZE 0 5%	1/10W
<IC LINK>				JR032	1-216-296-91	METAL GLAZE 0 5%	1/8W
PS301A	1-532-727-91	LINK, IC 0.25A		JR033	1-216-295-00	METAL GLAZE 0 5%	1/10W
PS501A	1-532-679-91	LINK, IC 0.6A		JR034	1-216-295-00	METAL GLAZE 0 5%	1/10W
				JR035	1-216-295-00	METAL GLAZE 0 5%	1/10W
<TRANSISTOR>				JR036	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q104	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR037	1-216-296-91	METAL GLAZE 0 5%	1/8W
Q105	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR038	1-216-296-91	METAL GLAZE 0 5%	1/8W
Q201	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR039	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q202	8-729-920-74	TRANSISTOR 2SC2412K-QR		JR040	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q203	8-729-900-53	TRANSISTOR DTC114EK		JR041	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q204	8-729-900-53	TRANSISTOR DTC114EK		JR042	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q205	8-729-900-53	TRANSISTOR DTC114EK		JR043	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q206	8-729-216-22	TRANSISTOR 2SA1162-G		JR048	1-216-296-91	METAL GLAZE 0 5%	1/8W
Q207	8-729-216-22	TRANSISTOR 2SA1162-G		JR900	1-216-296-91	METAL GLAZE 0 5%	1/8W
Q301	8-729-421-19	TRANSISTOR UN2213		JR901	1-216-296-91	METAL GLAZE 0 5%	1/8W
Q302	8-729-901-46	TRANSISTOR DTA114YK		JR902	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q303	8-729-012-31	TRANSISTOR 2SC4040-TL2-Q		JR903	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q401	8-729-920-74	TRANSISTOR 2SC2412K-QR		R001	1-216-027-00	METAL GLAZE 120 5%	1/10W
Q403	8-729-920-74	TRANSISTOR 2SC2412K-QR		R002	1-216-043-00	METAL GLAZE 560 5%	1/10W
Q404	8-729-920-74	TRANSISTOR 2SC2412K-QR		R003	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q405	8-729-216-22	TRANSISTOR 2SA1162-G		R004	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q406	8-729-216-22	TRANSISTOR 2SA1162-G		R005	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q407	8-729-216-22	TRANSISTOR 2SA1162-G		R006	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q408	8-729-216-22	TRANSISTOR 2SA1162-G		R007	1-216-295-00	METAL GLAZE 0 5%	1/10W
Q409	8-729-920-74	TRANSISTOR 2SC2412K-QR		R008	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q410	8-729-216-22	TRANSISTOR 2SA1162-G		R009	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q412	8-729-424-18	TRANSISTOR UN2113		R010	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q501	8-729-424-12	TRANSISTOR UN2112		R011	1-216-049-00	METAL GLAZE 1K 5%	1/10W
Q503	8-729-119-76	TRANSISTOR 2SA1175-HFE		R012	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
Q602	8-729-920-74	TRANSISTOR 2SC2412K-QR		R013	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q603	8-729-920-74	TRANSISTOR 2SC2412K-QR		R014	1-216-033-00	METAL GLAZE 220 5%	1/10W
Q701	8-729-424-56	TRANSISTOR UN211L		R015	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R016	1-216-033-00	METAL GLAZE 220 5%	1/10W
				R017	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R018	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R019	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R020	1-216-025-00	METAL GLAZE 100 5%	1/10W
JR002	1-216-296-91	METAL GLAZE 0 5%	1/8W	R021	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR003	1-216-296-91	METAL GLAZE 0 5%	1/8W	R022	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR004	1-216-296-91	METAL GLAZE 0 5%	1/8W	R023	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR006	1-216-296-91	METAL GLAZE 0 5%	1/8W	R024	1-216-295-00	METAL GLAZE 0 5%	1/10W
JR007	1-216-295-00	METAL GLAZE 0 5%	1/10W	R025	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR008	1-216-295-00	METAL GLAZE 0 5%	1/10W	R026	1-216-025-00	METAL GLAZE 100 5%	1/10W
JR009	1-216-295-00	METAL GLAZE 0 5%	1/10W				
JR010	1-216-296-91	METAL GLAZE 0 5%	1/8W	R027	1-216-077-00	METAL GLAZE 15K 5%	1/10W
JR011	1-216-296-91	METAL GLAZE 0 5%	1/8W	R028	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
JR012	1-216-295-00	METAL GLAZE 0 5%	1/10W	R029	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR013	1-216-296-91	METAL GLAZE 0 5%	1/8W	R030	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
JR014	1-216-296-91	METAL GLAZE 0 5%	1/8W	R031	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR015	1-216-296-91	METAL GLAZE 0 5%	1/8W	R032	1-216-077-00	METAL GLAZE 15K 5%	1/10W
JR016	1-216-296-91	METAL GLAZE 0 5%	1/8W	R033	1-216-041-00	METAL GLAZE 470 5%	1/10W
JR017	1-216-296-91	METAL GLAZE 0 5%	1/8W	R034	1-216-049-00	METAL GLAZE 1K 5%	1/10W
JR018	1-216-296-91	METAL GLAZE 0 5%	1/8W	R035	1-216-049-00	METAL GLAZE 1K 5%	1/10W
				R036	1-216-049-00	METAL GLAZE 1K 5%	1/10W

MA2

REF. NO.	PART NO.	DESCRIPTION	REMARK
R037	1-216-295-00	METAL GLAZE 0	1/10W
R038	1-216-049-00	METAL GLAZE 1K	1/10W
R041	1-216-081-00	METAL GLAZE 22K	1/10W
R042	1-216-049-00	METAL GLAZE 1K	1/10W
R043	1-216-057-00	METAL GLAZE 2.2K	1/10W
R044	1-216-049-00	METAL GLAZE 1K	1/10W
R045	1-216-057-00	METAL GLAZE 2.2K	1/10W
R046	1-216-081-00	METAL GLAZE 22K	1/10W
R047	1-216-081-00	METAL GLAZE 22K	1/10W
R049	1-216-049-00	METAL GLAZE 1K	1/10W
R050	1-216-049-00	METAL GLAZE 1K	1/10W
R051	1-216-033-00	METAL GLAZE 220	1/10W
R052	1-216-049-00	METAL GLAZE 1K	1/10W
R053	1-216-049-00	METAL GLAZE 1K	1/10W
R054	1-216-033-00	METAL GLAZE 220	1/10W
R055	1-216-073-00	METAL GLAZE 10K	1/10W
R056	1-216-073-00	METAL GLAZE 10K	1/10W
R058	1-216-033-00	METAL GLAZE 220	1/10W
R059	1-216-089-91	METAL GLAZE 47K	1/10W
R060	1-216-065-00	METAL GLAZE 4.7K	1/10W
R061	1-216-065-00	METAL GLAZE 4.7K	1/10W
R064	1-216-049-00	METAL GLAZE 1K	1/10W
R065	1-216-049-00	METAL GLAZE 1K	1/10W
R070	1-216-041-00	METAL GLAZE 470	1/10W
R071	1-216-226-00	METAL GLAZE 15K	1/8W
R102	1-216-073-00	METAL GLAZE 10K	1/10W
R107	1-216-049-00	METAL GLAZE 1K	1/10W
R108	1-216-025-00	METAL GLAZE 100	1/10W
R109	1-216-065-00	METAL GLAZE 4.7K	1/10W
R110	1-216-041-00	METAL GLAZE 470	1/10W
R111	1-216-075-00	METAL GLAZE 12K	1/10W
R112	1-216-071-00	METAL GLAZE 8.2K	1/10W
R113	1-216-057-00	METAL GLAZE 2.2K	1/10W
R114	1-216-057-00	METAL GLAZE 2.2K	1/10W
R115	1-216-017-00	METAL GLAZE 47	1/10W
R116	1-216-017-00	METAL GLAZE 47	1/10W
R118	1-216-025-00	METAL GLAZE 100	1/10W
R119	1-216-295-00	METAL GLAZE 0	1/10W
R120	1-216-073-00	METAL GLAZE 10K	1/10W
R201	1-216-037-00	METAL GLAZE 330	1/10W
R202	1-216-041-00	METAL GLAZE 470	1/10W
R203	1-216-295-00	METAL GLAZE 0	1/10W
R206	1-216-295-00	METAL GLAZE 0	1/10W
R207	1-216-049-00	METAL GLAZE 1K	1/10W
R208	1-216-049-00	METAL GLAZE 1K	1/10W
R209	1-216-049-00	METAL GLAZE 1K	1/10W
R210	1-216-073-00	METAL GLAZE 10K	1/10W
R211	1-216-065-00	METAL GLAZE 4.7K	1/10W
R212	1-216-065-00	METAL GLAZE 4.7K	1/10W
R214	1-216-073-00	METAL GLAZE 10K	1/10W
R215	1-216-073-00	METAL GLAZE 10K	1/10W
R216	1-216-079-00	METAL GLAZE 18K	1/10W
R217	1-216-081-00	METAL GLAZE 22K	1/10W
R218	1-216-095-00	METAL GLAZE 82K	1/10W
R219	1-216-095-00	METAL GLAZE 82K	1/10W
R222	1-216-097-00	METAL GLAZE 100K	1/10W
R223	1-216-097-00	METAL GLAZE 100K	1/10W
R224	1-216-073-00	METAL GLAZE 10K	1/10W
R225	1-216-295-00	METAL GLAZE 0	1/10W
R226	1-216-295-00	METAL GLAZE 0	1/10W
R227	1-216-057-00	METAL GLAZE 2.2K	1/10W
R228	1-216-079-00	METAL GLAZE 18K	1/10W
R229	1-216-081-00	METAL GLAZE 22K	1/10W
R301	1-216-083-00	METAL GLAZE 27K	1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R303	1-216-689-11	METAL GLAZE 39K	1/10W
R304	1-216-041-00	METAL GLAZE 470	1/10W
R305	1-216-109-00	METAL GLAZE 330K	1/10W
R306	1-216-067-00	METAL GLAZE 5.6K	1/10W
R307	1-216-073-00	METAL GLAZE 10K	1/10W
R308	1-216-073-00	METAL GLAZE 10K	1/10W
R309	1-216-295-00	METAL GLAZE 0	1/10W
R312	1-216-085-00	METAL GLAZE 33K	1/10W
R313	1-216-089-91	METAL GLAZE 47K	1/10W
R314	1-216-068-00	METAL GLAZE 6.2K	1/10W
R315	1-216-129-00	METAL GLAZE 2.2M	1/10W
R316	1-216-069-00	METAL GLAZE 6.8K	1/10W
R317	1-216-091-00	METAL GLAZE 56K	1/10W
R318	1-216-053-00	METAL GLAZE 1.5K	1/10W
R319	1-216-039-00	METAL GLAZE 390	1/10W
R320	1-216-085-00	METAL GLAZE 33K	1/10W
R322	1-216-073-00	METAL GLAZE 10K	1/10W
R323	1-216-099-00	METAL GLAZE 120K	1/10W
R324	1-216-295-00	METAL GLAZE 0	1/10W
R325	1-249-389-11	CARBON 4.7	1/4W F
R326	1-216-081-00	METAL GLAZE 22K	1/10W
R327	1-216-091-00	METAL GLAZE 56K	1/10W
R328	1-216-068-00	METAL GLAZE 6.2K	1/10W
R329	1-216-083-00	METAL GLAZE 27K	1/10W
R330	1-216-085-00	METAL GLAZE 33K	1/10W
R331	1-216-001-00	METAL GLAZE 10	1/10W
R401	1-216-226-00	METAL GLAZE 15K	1/8W
R402	1-216-226-00	METAL GLAZE 15K	1/8W
R403	1-216-113-00	METAL GLAZE 470K	1/10W
R404	1-216-033-00	METAL GLAZE 220	1/10W
R408	1-216-041-00	METAL GLAZE 470	1/10W
R410	1-216-041-00	METAL GLAZE 470	1/10W
R412	1-216-022-00	METAL GLAZE 75	1/10W
R414	1-216-045-00	METAL GLAZE 680	1/10W
R415	1-216-073-00	METAL GLAZE 10K	1/10W
R417	1-216-295-00	METAL GLAZE 0	1/10W
R418	1-216-121-00	METAL GLAZE 1M	1/10W
R419	1-216-097-00	METAL GLAZE 100K	1/10W
R420	1-216-065-00	METAL GLAZE 4.7K	1/10W
R421	1-216-065-00	METAL GLAZE 4.7K	1/10W
R422	1-216-045-00	METAL GLAZE 680	1/10W
R423	1-216-113-00	METAL GLAZE 470K	1/10W
R424	1-216-073-00	METAL GLAZE 10K	1/10W
R426	1-216-039-00	METAL GLAZE 390	1/10W
R427	1-216-073-00	METAL GLAZE 10K	1/10W
R428	1-216-133-00	METAL GLAZE 3.3M	1/10W
R429	1-216-133-00	METAL GLAZE 3.3M	1/10W
R430	1-216-065-00	METAL GLAZE 4.7K	1/10W
R432	1-216-049-00	METAL GLAZE 1K	1/10W
R433	1-216-039-00	METAL GLAZE 390	1/10W
R434	1-216-061-00	METAL GLAZE 3.3K	1/10W
R435	1-216-049-00	METAL GLAZE 1K	1/10W
R436	1-216-073-00	METAL GLAZE 10K	1/10W
R437	1-216-065-00	METAL GLAZE 4.7K	1/10W
R438	1-216-057-00	METAL GLAZE 2.2K	1/10W
R439	1-216-025-00	METAL GLAZE 100	1/10W
R441	1-216-041-00	METAL GLAZE 470	1/10W
R442	1-216-073-00	METAL GLAZE 10K	1/10W
R443	1-212-861-11	FUSIBLE 15	1/4W F
R445	1-216-089-91	METAL GLAZE 47K	1/10W
R446	1-216-079-00	METAL GLAZE 18K	1/10W
R448	1-216-089-91	METAL GLAZE 47K	1/10W
R449	1-249-405-11	CARBON 100	1/4W F

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

REF. NO.	PART NO.	DESCRIPTION	REMARK
R450	1-216-022-00	METAL GLAZE 75	1/10W
R451	1-216-022-00	METAL GLAZE 75	1/10W
R452	1-216-022-00	METAL GLAZE 75	1/10W
R453	1-216-022-00	METAL GLAZE 75	1/10W
R454	1-216-022-00	METAL GLAZE 75	1/10W
R460	1-216-113-00	METAL GLAZE 470K	1/10W
R462	1-216-033-00	METAL GLAZE 220	1/10W
R463	1-216-085-00	METAL GLAZE 33K	1/10W
R464	1-216-089-91	METAL GLAZE 47K	1/10W
R482	1-216-049-00	METAL GLAZE 1K	1/10W
R483	1-216-073-00	METAL GLAZE 10K	1/10W
R501	1-216-065-00	METAL GLAZE 4.7K	1/10W
R502	1-216-093-00	METAL GLAZE 68K	1/10W
R503	1-216-119-00	METAL GLAZE 820K	1/10W
R504	1-216-049-00	METAL GLAZE 1K	1/10W
R505	1-216-089-91	METAL GLAZE 47K	1/10W
R506	1-216-089-91	METAL GLAZE 47K	1/10W
R507	1-216-117-00	METAL GLAZE 680K	1/10W
R508	1-216-073-00	METAL GLAZE 10K	1/10W
R509	1-216-113-00	METAL GLAZE 470K	1/10W
R510	1-216-097-00	METAL GLAZE 100K	1/10W
R511	1-216-097-00	METAL GLAZE 100K	1/10W
R512	1-216-073-00	METAL GLAZE 10K	1/10W
R513	1-216-093-00	METAL GLAZE 68K	1/10W
R514	1-216-109-00	METAL GLAZE 330K	1/10W
R515	1-216-065-00	METAL GLAZE 4.7K	1/10W
R516	1-216-085-00	METAL GLAZE 33K	1/10W
R517	1-216-037-00	METAL GLAZE 330	1/10W
R518	1-216-079-00	METAL GLAZE 18K	1/10W
R519	1-216-081-00	METAL GLAZE 22K	1/10W
R520	1-216-083-00	METAL GLAZE 27K	1/10W
R521	1-216-103-91	METAL GLAZE 180K	1/10W
R522	1-216-049-00	METAL GLAZE 1K	1/10W
R523	1-216-689-11	METAL GLAZE 39K	1/10W
R524	1-216-079-00	METAL GLAZE 18K	1/10W
R525	1-216-089-91	METAL GLAZE 47K	1/10W
R527	1-216-077-00	METAL GLAZE 15K	1/10W
R528	1-216-017-00	METAL GLAZE 47	1/10W
R529	1-216-071-00	METAL GLAZE 8.2K	1/10W
R530	1-216-049-00	METAL GLAZE 1K	1/10W
R531	1-216-101-00	METAL GLAZE 150K	1/10W
R532	1-216-073-00	METAL GLAZE 10K	1/10W
R533	1-216-089-91	METAL GLAZE 47K	1/10W
R534	1-216-057-00	METAL GLAZE 2.2K	1/10W
R535	1-216-057-00	METAL GLAZE 2.2K	1/10W
R536	1-216-089-91	METAL GLAZE 47K	1/10W
R537	1-216-667-11	METAL CHIP 4.7K	0.50% 1/10W
R538	1-216-675-11	METAL CHIP 10K	0.50% 1/10W
R539	1-216-069-00	METAL GLAZE 6.8K	1/10W
R540	1-216-041-00	METAL GLAZE 470	1/10W
R541	1-216-041-00	METAL GLAZE 470	1/10W
R542	1-216-041-00	METAL GLAZE 470	1/10W
R543	1-216-041-00	METAL GLAZE 470	1/10W
R544	1-216-097-00	METAL GLAZE 100K	1/10W
R545	1-216-097-00	METAL GLAZE 100K	1/10W
R546	1-216-065-00	METAL GLAZE 4.7K	1/10W
R547	1-216-065-00	METAL GLAZE 4.7K	1/10W
R548	1-216-033-00	METAL GLAZE 220	1/10W
R549	1-216-049-00	METAL GLAZE 1K	1/10W
R550	1-216-069-00	METAL GLAZE 6.8K	1/10W
R551	1-249-410-11	CARBON 270	1/4W
R552	1-216-089-91	METAL GLAZE 47K	1/10W
R553	1-216-089-91	METAL GLAZE 47K	1/10W
R554	1-216-089-91	METAL GLAZE 47K	1/10W

MA2

REF. NO.	PART NO.	DESCRIPTION	REMARK		
R555	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R556	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R557	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R558	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R559	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R559	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R560	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R561	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R562	1-216-671-11	METAL CHIP	6.8K	0.50%	1/10W
R563	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R564	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R565	1-216-091-00	METAL GLAZE	56K	5%	1/10W
R566	1-216-673-11	METAL CHIP	8.2K	0.50%	1/10W
R567	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R568	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R569	1-212-950-61	FUSIBLE	4.7	5%	1/2W F
R570	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R571	1-216-055-00	METAL GLAZE	1.8K	5%	1/10W
R572	1-216-295-00	METAL GLAZE	0	5%	1/10W
R574	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R575	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R577	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R578	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R579	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R580	1-216-295-00	METAL GLAZE	0	5%	1/10W
R581	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R582	1-216-117-00	METAL GLAZE	680K	5%	1/10W
R583	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R584	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R585	1-216-075-00	METAL GLAZE	12K	5%	1/10W
R586	1-216-077-00	METAL GLAZE	15K	5%	1/10W
R588	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R589	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R590	1-249-412-11	CARBON	390	5%	1/4W
R591	1-216-041-00	METAL GLAZE	470	5%	1/10W
R601	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R701	1-216-295-00	METAL GLAZE	0	5%	1/10W
R702	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R703	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R704	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R705	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R706	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R707	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R708	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R709	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R710	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R711	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R712	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R713	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R714	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R715	1-216-089-91	METAL GLAZE	47K	5%	1/10W
R716	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R717	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R718	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R719	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R720	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R721	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R722	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R723	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R724	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R726	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R728	1-216-001-00	METAL GLAZE	10	5%	1/10W
R730	1-216-113-00	METAL GLAZE	470K	5%	1/10W

YC2

RP3

RP3

REF. NO.	PART NO.	DESCRIPTION	REMARK
L016	1-410-117-31	INDUCTOR	0.68MH
L018	1-408-419-00	INDUCTOR	68UH
L019	1-408-421-00	INDUCTOR	100UH
L020	1-408-609-41	INDUCTOR	33UH
L023	1-410-435-21	INDUCTOR	220UH
<TRANSISTOR>			
Q002	8-729-422-29	TRANSISTOR 2SD601A-S	
Q003	8-729-422-29	TRANSISTOR 2SD601A-S	
Q004	8-729-422-29	TRANSISTOR 2SD601A-S	
Q005	8-729-422-29	TRANSISTOR 2SD601A-S	
Q006	8-729-422-29	TRANSISTOR 2SD601A-S	
Q007	8-729-422-29	TRANSISTOR 2SD601A-S	
Q008	8-729-421-19	TRANSISTOR UN2113	
Q009	8-729-424-18	TRANSISTOR UN2113	
Q011	8-729-422-37	TRANSISTOR 2SB709A-R	
Q012	8-729-422-37	TRANSISTOR 2SB709A-R	
Q013	8-729-421-19	TRANSISTOR UN2113	
Q014	8-729-424-56	TRANSISTOR UN2111	
Q015	8-729-424-18	TRANSISTOR UN2113	
Q016	8-729-422-37	TRANSISTOR 2SB709A-R	
Q017	8-729-422-37	TRANSISTOR 2SB709A-R	
Q018	8-729-422-29	TRANSISTOR 2SD601A-S	
Q020	8-729-422-37	TRANSISTOR 2SB709A-R	
Q033	8-729-421-19	TRANSISTOR UN2113	
Q034	8-729-421-19	TRANSISTOR UN2113	
Q035	8-729-421-19	TRANSISTOR UN2113	
Q111	8-729-421-19	TRANSISTOR UN2113	
Q112	8-729-424-18	TRANSISTOR UN2113	
Q113	8-729-421-19	TRANSISTOR UN2113	
Q115	8-729-421-19	TRANSISTOR UN2113	
<RESISTOR>			
JR003	1-216-295-00	METAL GLAZE 0 5%	1/10W
R001	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R002	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R003	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R004	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R005	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R006	1-216-083-00	METAL GLAZE 27K 5%	1/10W
R007	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R008	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R009	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R010	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R011	1-216-689-11	METAL GLAZE 39K 5%	1/10W
R012	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R013	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R014	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R015	1-216-041-00	METAL GLAZE 470 5%	1/10W
R016	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R017	1-216-035-00	METAL GLAZE 270 5%	1/10W
R018	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R019	1-216-035-00	METAL GLAZE 270 5%	1/10W
R020	1-216-085-00	METAL GLAZE 33K 5%	1/10W
R022	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R023	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R024	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R025	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R026	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R029	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R030	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R031	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R034	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W

REF. NO.	PART NO.	DESCRIPTION	REMARK
R035	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R036	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R037	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R038	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R039	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R040	1-216-037-00	METAL GLAZE 330 5%	1/10W
R041	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R042	1-216-052-00	METAL GLAZE 1.3K 5%	1/10W
R043	1-216-036-00	METAL GLAZE 300 5%	1/10W
R044	1-216-295-00	METAL GLAZE 0 5%	1/10W
R045	1-216-121-00	METAL GLAZE 1M 5%	1/10W
R046	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R048	1-216-093-00	METAL GLAZE 68K 5%	1/10W
R049	1-216-065-00	METAL GLAZE 4.7K 5%	1/10W
R050	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R051	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R052	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R053	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R054	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R055	1-216-059-00	METAL GLAZE 2.7K 5%	1/10W
R057	1-216-044-00	METAL GLAZE 620 5%	1/10W
R058	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R059	1-216-041-00	METAL GLAZE 470 5%	1/10W
R066	1-216-295-00	METAL GLAZE 0 5%	1/10W
R110	1-216-045-00	METAL GLAZE 680 5%	1/10W
R113	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R114	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W
R115	1-216-045-00	METAL GLAZE 680 5%	1/10W
R116	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R117	1-216-071-00	METAL GLAZE 8.2K 5%	1/10W
R118	1-216-023-00	METAL GLAZE 82 5%	1/10W
R119	1-216-045-00	METAL GLAZE 680 5%	1/10W
R120	1-216-037-00	METAL GLAZE 330 5%	1/10W
R122	1-216-295-00	METAL GLAZE 0 5%	1/10W
R125	1-216-295-00	METAL GLAZE 0 5%	1/10W
R126	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R127	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R128	1-216-089-91	METAL GLAZE 47K 5%	1/10W
R129	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R131	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R132	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R133	1-216-079-00	METAL GLAZE 18K 5%	1/10W
<VARIABLE RESISTOR>			
RV002	1-241-630-11	RES. ADJ. CARBON 10K	
RV003	1-241-630-11	RES. ADJ. CARBON 10K	
RV004	1-241-630-11	RES. ADJ. CARBON 10K	
RV005	1-241-630-11	RES. ADJ. CARBON 10K	
RV006	1-241-628-11	RES. ADJ. CARBON 2.2K	
<CRYSTAL>			
X001	1-579-608-11	VIBRATOR, CRYSTAL	
<CAPACITOR>			
C435	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C437	1-163-105-00	CERAMIC CHIP 33PF	50V

REF. NO.	PART NO.	DESCRIPTION	REMARK
C439	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C440	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C441	1-124-925-11	ELECT 2.2MF	20%
C442	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C443	1-126-233-11	ELECT 22MF	20%
C445	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C501	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C502	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C503	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C506	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C507	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C508	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C509	1-124-463-00	ELECT 0.1MF	20%
C510	1-163-103-00	CERAMIC CHIP 27PF	50V
C511	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C512	1-163-035-00	CERAMIC CHIP 0.047MF	50V
C513	1-124-589-11	ELECT 47MF	20%
C514	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C516	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C517	1-163-105-00	CERAMIC CHIP 33PF	50V
C518	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C519	1-163-113-00	CERAMIC CHIP 68PF	50V
C520	1-163-129-00	CERAMIC CHIP 330PF	50V
C521	1-163-111-00	CERAMIC CHIP 56PF	50V
C523	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C524	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C525	1-124-126-00	ELECT 47MF	20%
C526	1-124-126-00	ELECT 47MF	20%
C527	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C528	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C529	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C530	1-216-295-00	METAL GLAZE 0 5%	1/10W
C531	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C532	1-124-126-00	ELECT 47MF	20%
C534	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C539	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C540	1-163-093-00	CERAMIC CHIP 10PF	50V
<CONNECTOR>			
CN501	1-691-613-11	CONNECTOR, BOARD TO BOARD 6P	
CN502	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
CN503	*1-564-519-11	PLUG, CONNECTOR 4P	
<DIODE>			
D501	8-719-986-73	DIODE RB441Q	
<IC>			
IC501	8-759-048-53	IC LA7376-A	
<COIL>			
L403	1-410-519-11	INDUCTOR 68UH	
L499	1-410-521-11	INDUCTOR 100UH	
L501	1-408-421-00	INDUCTOR 100UH	
L503	1-408-416-00	INDUCTOR 39UH	
L504	1-408-416-00	INDUCTOR 39UH	
L505	1-408-411-00	INDUCTOR 15UH	
L506	1-408-424-00	INDUCTOR 180UH	
L507	1-408-411-00	INDUCTOR 15UH	
L509	1-408-421-00	INDUCTOR 100UH	
L510	1-408-421-00	INDUCTOR 100UH	
<TRANSISTOR>			
Q404	8-729-422-29	TRANSISTOR 2SD601A-S	
Q406	8-729-422-29	TRANSISTOR 2SD601A-S	
Q407	8-729-422-37	TRANSISTOR 2SB709A-R	
Q408	8-729-422-37	TRANSISTOR 2SB709A-R	
Q409	8-729-422-29	TRANSISTOR 2SD601A-S	
Q410	8-729-422-29	TRANSISTOR 2SD601A-S	
Q501	8-729-422-29	TRANSISTOR 2SD601A-S	
Q502	8-729-422-37	TRANSISTOR 2SB709A-R	
Q503	8-729-422-29	TRANSISTOR 2SD601A-S	
Q506	8-729-421-19	TRANSISTOR UN2213	
Q507	8-729-422-29	TRANSISTOR 2SD601A-S	
Q510	8-729-422-29	TRANSISTOR 2SD601A-S	
Q511	8-729-421-19	TRANSISTOR UN2213	
Q512	8-729-422-29	TRANSISTOR 2SD601A-S	
<RESISTOR>			
R473	1-216-079-00	METAL GLAZE 18K 5%	1/10W
R474	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R475	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R476	1-216-042-00	METAL GLAZE 510 5%	1/10W
R478	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R479	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R480	1-216-033-00	METAL GLAZE 220 5%	1/10W
R481	1-216-041-00	METAL GLAZE 470 5%	1/10W
R482	1-216-053-00	METAL GLAZE 1.5K 5%	1/10W
R485	1-216-061-00	METAL GLAZE 3.3K 5%	1/10W
R486	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R487	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R501	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R502	1-216-068-00	METAL GLAZE 6.2K 5%	1/10W
R503	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R504	1-216-051-00	METAL GLAZE 1.2K 5%	1/10W
R505	1-216-070-00	METAL GLAZE 7.5K 5%	1/10W
R506	1-216-069-00	METAL GLAZE 6.8K 5%	1/10W
R507	1-216-077-00	METAL GLAZE 15K 5%	1/10W
R508	1-216-084-00	METAL GLAZE 30K 5%	1/10W
R509	1-216-075-00	METAL GLAZE 12K 5%	1/10W
R510	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R511	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R512	1-216-081-00	METAL GLAZE 22K 5%	1/10W
R513	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R514	1-216-047-00	METAL GLAZE 820 5%	1/10W
R515	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R516	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
R517	1-216-039-00	METAL GLAZE 390 5%	1/10W
R518	1-216-039-00	METAL GLAZE 390 5%	1/10W
R519	1-216-047-00	METAL GLAZE 820 5%	1/10W
R520	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R521	1-216-063-00	METAL GLAZE 3.9K 5%	1/10W
R522	1-216-043-00	METAL GLAZE 560 5%	1/10W
R523	1-216-045-00	METAL GLAZE 680 5%	1/10W
R524	1-216-041-00	METAL GLAZE 470 5%	1/10W
R525	1-216-057-00	METAL GLAZE 1K 5%	1/10W
R528	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R529	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R533	1-216-073-00	METAL GLAZE 10K 5%	1/10W
R534	1-216-067-00	METAL GLAZE 5.6K 5%	1/10W
R535	1-216-049-00	METAL GLAZE 1K 5%	1/10W
R536	1-216-046-00	METAL GLAZE 750 5%	1/10W
R537	1-216-055-00	METAL GLAZE 1.8K 5%	1/10W

MA2

VP

TK

ZD

REF. NO.	PART NO.	DESCRIPTION			
R733	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R734	1-216-057-00	METAL GLAZE	2.2K	5%	1/10W
R739	1-216-081-00	METAL GLAZE	22K	5%	1/10W
R740	1-216-049-00	METAL GLAZE	1K	5%	1/10W
R900	1-216-065-00	METAL GLAZE	4.7K	5%	1/10W
R901	1-216-037-00	METAL GLAZE	330	5%	1/10W
<VARIABLE RESISTOR>					
RV301	1-241-767-21	RES, ADJ, CARBON	100K		
<TRANSFORMER>					
T301	1-423-414-11	TRANSFORMER, BIAS OSCILLATION			
<TUNER>					
TU101	1-693-233-11	TUNER, VIF (BTF-2C404)			
<CRYSTAL>					
X501	1-578-774-11	VIBRATOR, CRYSTAL			
X701	1-579-463-11	VIBRATOR, CRYSTAL			

*A-1347-086-A		VP BOARD, COMPLETE (KV-V1410D)			

<CAPACITOR>					
C901	1-164-004-11	CERAMIC CHIP	0.1MF	10%	
C902	1-163-809-11	CERAMIC CHIP	0.047MF	10%	
C904	1-163-809-11	CERAMIC CHIP	0.047MF	10%	
C906	1-163-989-11	CERAMIC CHIP	0.033MF	10%	
C910	1-163-121-00	CERAMIC CHIP	150PF	5%	
<CONNECTOR>					
CN901	1-573-824-11	CONNECTOR, BOARD TO BOARD	10P		
<DIODE>					
D901	8-719-901-33	DIODE 1SS133			
<IC>					
IC901	8-759-030-60	IC SDA5642			
IC902	8-759-147-30	IC UPD75004-G8-562-384			
<COIL>					
L941	1-410-509-11	INDUCTOR	10UH		
<RESISTOR>					
R901	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R902	1-216-073-00	METAL GLAZE	10K	5%	1/10W
R903	1-216-097-00	METAL GLAZE	100K	5%	1/10W
R904	1-216-119-00	METAL GLAZE	820K	5%	1/10W
R905	1-216-025-00	METAL GLAZE	100	5%	1/10W
R906	1-216-119-00	METAL GLAZE	820K	5%	1/10W
R907	1-216-067-00	METAL GLAZE	5.6K	5%	1/10W
R908	1-216-121-00	METAL GLAZE	1M	5%	1/10W

REMARK	REF.NO.	PART NO.	DESCRIPTION	REMARK
	R910	1-216-057-00	METAL GLAZE 2.2K 5%	1/10W
	R911	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R912	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	R913	1-216-073-00	METAL GLAZE 10K 5%	1/10W
	<CRYSTAL>			
	X901	1-577-101-11	VIBRATOR. CERAMIC	

	*1-650-181-11	TX BOARD		

	<CONNECTOR>			
	CN301	1-764-271-31	CONNECTOR. BOARD TO BOARD 9P	
	CN302	1-764-272-31	CONNECTOR. BOARD TO BOARD 13P	
	CN303	1-506-469-11	PIN. CONNECTOR 4P	
	CN304	1-695-388-21	PIN. CONNECTOR (PC BOARD) 27P	
	<VARIABLE RESISTOR>			
	RV302	1-241-123-11	RES. ADJ. CARBON 47K	

	*A-1390-426-A	ZD BOARD. COMPLETE		

	4-382-854-11	SCREW (M3X10). P. SW (+)		
	<CAPACITOR>			
25V	C901	1-124-477-11	ELECT 47MF	20% 25V
25V	C902	1-124-477-11	ELECT 47MF	20% 25V
25V	C903	1-124-480-11	ELECT 470MF	20% 25V
50V	C904	1-128-546-81	ELECT 10000MF	20% 10V
	C905	1-124-477-11	ELECT 47MF	20% 25V
	C906	1-124-477-11	ELECT 47MF	20% 25V
	C907	1-124-477-11	ELECT 47MF	20% 25V
	C908	1-124-477-11	ELECT 47MF	20% 25V
	<CONNECTOR>			
	CN901	*1-564-509-11	PLUG. CONNECTOR 6P	
	CN902	*1-564-512-11	PLUG. CONNECTOR 9P	
	<IC>			
	IC901	8-759-148-79	IC UPC2406HF	
	IC902	8-749-920-43	IC SI-3050CA	
	IC903	8-759-518-68	IC PQ12RF21	
	IC904	8-759-198-03	IC PQ09RF21	
	IC905	8-749-921-21	IC SI-3120C	
	<RESISTOR>			
	R901	1-249-409-11	CARBON 220 5%	1/4W
	R902	1-249-409-11	CARBON 220 5%	1/4W
	R903	1-249-409-11	CARBON 220 5%	1/4W

YC2

REF. NO.	PART NO.	DESCRIPTION	REMARK
*A-1394-504-A YC2 BOARD, COMPLETE			

<CAPACITOR>			
C001	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C002	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C003	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C004	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C005	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C006	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C007	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C008	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C009	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C101	1-124-126-00	ELECT 47MF	20% 10V
C104	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C105	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C111	1-163-107-00	CERAMIC CHIP 39PF	5% 50V
C113	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C114	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C118	1-163-089-00	CERAMIC CHIP 6PF	0.25PF 50V
C119	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C130	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C131	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C132	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
<CONNECTOR>			
CN001	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P	
CN002	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P	
<DIODE>			
D001	8-719-901-33	DIODE 1SS133	
D002	8-719-901-33	DIODE 1SS133	
D003	8-719-901-33	DIODE 1SS133	
D004	8-719-901-33	DIODE 1SS133	
D006	8-719-901-33	DIODE 1SS133	
D007	8-719-901-33	DIODE 1SS133	
D008	8-719-901-33	DIODE 1SS133	
D011	8-719-901-33	DIODE 1SS133	
D012	8-719-901-33	DIODE 1SS133	
D013	8-719-901-33	DIODE 1SS133	
<DELAY LINE>			
DL001	1-415-728-31	DELAY LINE, 2H (ULTRASONIC)	
DL002	1-415-856-11	DELAY LINE, ULTRASONIC GLASS	
<IC>			
IC001	8-759-046-76	IC LA7396	
IC002	8-759-821-51	IC LC8992	
<COIL>			
L001	1-410-521-11	INDUCTOR 100UH	
L002	1-408-411-00	INDUCTOR 15UH	
L003	1-408-411-00	INDUCTOR 15UH	
L005	1-408-422-00	INDUCTOR 120UH	
L006	1-408-416-00	INDUCTOR 39UH	
L008	1-408-403-00	INDUCTOR 3.3UH	
L009	1-408-421-00	INDUCTOR 100UH	
L010	1-408-421-00	INDUCTOR 100UH	
L011	1-410-515-11	INDUCTOR 33UH	
L012	1-410-517-11	INDUCTOR 47UH	
L013	1-410-437-11	INDUCTOR 330UH	
L014	1-410-439-11	INDUCTOR 470UH	
L015	1-408-421-00	INDUCTOR 100UH	

C001	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C002	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C003	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C004	1-163-137-00	CERAMIC CHIP 680PF	5% 50V
C005	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C006	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C007	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C008	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C009	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C101	1-124-126-00	ELECT 47MF	20% 10V
C104	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C105	1-163-092-00	CERAMIC CHIP 9PF	0.25PF 50V
C111	1-163-107-00	CERAMIC CHIP 39PF	5% 50V
C113	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C114	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C118	1-163-089-00	CERAMIC CHIP 6PF	0.25PF 50V
C119	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C130	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C131	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C132	1-163-101-00	CERAMIC CHIP 22PF	5% 50V
C022	1-163-038-00	CERAMIC CHIP 0.1MF	25V
C023	1-163-037-11	CERAMIC CHIP 0.022MF	10% 25V
C025	1-163-103-00	CERAMIC CHIP 27PF	5% 50V
C027	1-163-113-00	CERAMIC CHIP 68PF	5% 50V
C029	1-163-123-00	CERAMIC CHIP 180PF	5% 50V
C030	1-163-107-00	CERAMIC CHIP 39PF	5% 50V
C031	1-163-111-00	CERAMIC CHIP 56PF	5% 50V
C032	1-124-277-11	ELECT 4.7MF	20% 35V
C033	1-163-139-00	CERAMIC CHIP 820PF	5% 50V
C034	1-163-088-00	CERAMIC CHIP 5PF	0.25PF 50V
C035	1-163-097-00	CERAMIC CHIP 15PF	5% 50V
C036	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C037	1-124-907-11	ELECT 10MF	20% 50V
C038	1-124-907-11	ELECT 10MF	20% 50V
C039	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C040	1-124-252-00	ELECT 0.33MF	20% 50V
C041	1-163-989-11	CERAMIC CHIP 0.033MF	10% 25V
C042	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C043	1-124-903-11	ELECT 1MF	20% 50V
C044	1-163-809-11	CERAMIC CHIP 0.047MF	10% 25V
C045	1-124-903-11	ELECT 1MF	20% 50V
C047	1-163-033-00	CERAMIC CHIP 0.022MF	50V
C048	1-163-114-00	CERAMIC CHIP 75PF	5% 50V
C049	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C050	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C051	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C052	1-124-927-11	ELECT 4.7MF	20% 50V
C053	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C057	1-163-109-00	CERAMIC CHIP 47PF	5% 50V
C058	1-163-105-00	CERAMIC CHIP 33PF	5% 50V
C059	1-124-477-11	ELECT 47MF	20% 16V
C060	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C061	1-124-903-11	ELECT 1MF	20% 50V
C062	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C063	1-163-127-00	CERAMIC CHIP 270PF	5% 50V
C064	1-163-119-00	CERAMIC CHIP 120PF	5% 50V
C065	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C066	1-163-031-11	CERAMIC CHIP 0.01MF	50V
C067	1-164-004-11	CERAMIC CHIP 0.1MF	10% 25V

RP3

REF. NO.	PART NO.	DESCRIPTION	REMARK
R538	1-216-047-00	METAL GLAZE 820	5% 1/10W
R539	1-216-065-00	METAL GLAZE 4.7K	5% 1/10W
R545	1-216-044-00	METAL GLAZE 620	5% 1/10W
R546	1-216-295-00	METAL GLAZE 0	5% 1/10W